F.No.14-56/2020 (Review of SIF) (A)
Item No.4 of 339 EC (18th January, 2021)

Scheme framed under regulation 4.1 b) of the Master of Pharmacy (M.Pharm) Course Regulations, 2014

Under this Scheme the application for consideration of approval u/s 12 of the Pharmacy Act, 1948 shall be submitted by an authority to the Pharmacy Council of India on Council's portal only.

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1. Eligibility Criteria:

The following authorities shall be eligible to apply **online** in the prescribed format named SIF (Standard Inspection Form) as per following details -

Authorities

a) The Central Government / State Government / Union Territory administration.

b) An autonomous body established by the Central or State Government for the purpose of pharmacy education.

c) A University.

d) A society registered under the Societies Registration Act, 1860 (21 of 1860) or corresponding Acts in States.

e) A public religious or charitable trust registered under the Trust Act, 1882 (2 of 1882) or the Wakfs Act, 1954 (29 of 1954).

2. Qualifying Criteria:

The following conditions shall be fulfilled by an applicant.

a) The applicant shall not start, conduct or increase in intake in M.Pharm course without prior permission of the Pharmacy Council of India.

b) The applicant shall provide necessary infrastructure facilities including teaching staff as prescribed by PCI -

   i) under "The Master of Pharmacy (M.Pharm) Course Regulations, 2014" for starting of the course.

   ii) Minimum Qualification for Teachers in Pharmacy Institutions Regulations, 2014.

c) M.Pharm course shall be permitted only in those institutions which are approved by the Pharmacy Council of India for B.Pharm course under section 12 of the Pharmacy Act, 1948 for the purpose of registration as a pharmacist. The B.Pharm institutions approved for conduct of B.Pharm course are not eligible to start M.Pharm course. However, the institutions established by the Central Government/State Govt. for the purpose of imparting postgraduate education shall be eligible for starting M.Pharm course directly.

d) Number of Students to be admitted in M.Pharm (per specialization):

i) The ratio of recognised Postgraduate teacher to number of students to be admitted for the Postgraduate degree course shall be 1:3 to the extent that in no circumstances more than 15 students for Postgraduate degree shall be registered in a department / specialization in one academic year.

ii) Provided that no postgraduate seats left unfilled in an academic year, shall be carried forward to the next or subsequent academic year.

e) Specialties/Subjects in which Postgraduate Degree in Pharmacy can be awarded by the Indian Universities:

1. Pharmaceutics
2. Industrial Pharmacy
3. Pharmaceutical Technology
4. Pharmaceutical Chemistry
5. Pharmaceutical Analysis
6. Pharmaceutical Quality Assurance
7. Regulatory Affairs
8. Pharmaceutical Biotechnology
9. Pharmacy Practice
10. Pharmacology
11. Pharmacognosy
12. Phytopharmacy & Phytomedicine
13. Any other specialty as may be prescribed by the Pharmacy Council of India from time to time.

3. Pre-requisite mandatory documents to be submitted:

a) The institution shall submit the following documents for starting of new pharmacy institution / introduction of new M.Pharm course by existing institution –

For Private institutions / Government institutions

For M.Pharm course (for each specialization)

- Consent of affiliation of Examining Authority

For Central Government University / State Government University / Private University

i) If **new University**, a copy of Gazette Notification declaring it a University.

ii) Relevant portion of Act / Gazette Notification empowering the University to start pharmacy programme, hold examination and confer diploma, degree.

iii) In case University's statutes does not empower the University to start pharmacy course, then the University's resolution of Board of Governors / Board of Management / Syndicate / Governing Council / Authority of the University to start pharmacy programmes be submitted in the prescribed format. The prescribed format is enclosed as **Annexure-I.**

iv) Certificate from Registrar of the University to the effect that University is willing to conduct the pharmacy examination in the prescribed format. The prescribed format is enclosed as **Annexure-II.**

v) Dully filled in prescribed format for approval of the University as Examining Authority u/s 12(2) of the Pharmacy Act, 1948 in a prescribed format. The prescribed format is enclosed as **Annexure-III.**

<u>If New Deemed to be University</u>

i) The MHRD Notification declaring it as deemed to be University be issued.

ii) Relevant portion of Act / Gazette Notification empowering the University to start pharmacy programme, hold examination and confer diploma, degree.

iii) In case University's statutes does not empower the University to start pharmacy course, then the University's resolution of Board of Governors / Board of Management / Syndicate / Governing Council / Authority of the University to start pharmacy programmes be submitted in the prescribed format. The prescribed format is enclosed as **Annexure-I.**

iv) Certificate from Registrar of the University to the effect that University is willing to conduct the pharmacy examination in the prescribed format. The prescribed format is enclosed as **Annexure-II.**

v) Dully filled in prescribed format for approval of the University as Examining Authority u/s 12(2) of the Pharmacy Act, 1948 in a prescribed format. The prescribed format is enclosed as **Annexure-III.**

b) The submission of above document will be pre-requisite for access to application in SIF (Standard Inspection Form) and submission of Pharmacy Education Regulatory Charges.

c) Online application in applicable prescribed form called SIF (Standard Inspection Form).

d) The online application shall be submitted on PCI portal within the prescribed time period as announced by the PCI on its website www.pci.nic.in

e) For consideration of raise in admissions where applicable the institution shall apply for the same as per the provisions of the Regulations for consideration of the council, however the admissions for the raise which is being sought shall be done only after the approval of the PCI and the examining authority.

It will be the responsibility of the institution to obtain the consent of Examining Authority for raise in admission before making admission and submit to PCI.

In case, the institution fails to obtain and submit the consent of the Examining Authority for raise in admission, it shall not admit the students (for raise) failing which the consequences shall rest on the institution. The PCI in no way shall be responsible for the same.

f) Online payment of Pharmacy Education Regulatory Charges -

Pharmacy Education Regulatory Charges structure –

Detail	**Pharmacy Education Regulatory Charges**
A. For existing courses	
1. Application & Approval u/s 12 of the Pharmacy Act.	Rs.50,000/- per specialization
2. Onsite verification of compliance, if any.	Rs.1,00,000/- per specialization
3. Annual affiliation Regulatory Charges after approval u/s 12 of the Pharmacy Act, 1948.	Rs.50,000/- per specialisation
B. For new courses	
1. Application Regulatory Charges for starting of M.Pharm course or increase in intake to be submitted with the application.	Rs.1,00,000/- per specialization
2. Approval u/s 12 of the Pharmacy Act, 1948.	Rs.1,00,000/- per specialization
3. Onsite verification of compliance if any.	Rs.1,00,000/- per specialization
4. Annual affiliation Regulatory Charges after approval u/s 12 of the Pharmacy Act, 1948.	Rs.50,000/- per specialization

Pharmacy Education Regulatory Charges for M.Pharm for Govt. Institutions / Central Universities /State Universities already running M.Pharm course/s –

Details	**Pharmacy Education Regulatory Charges**
For existing courses	
1. Application Regulatory Charges	Rs.50,000/- for all specialization
2. Approval u/s 12 of the Pharmacy Act.	
3. Onsite verification of compliance / complaint etc., if any.	Rs.1,00,000/- per inspection
4. Annual affiliation Regulatory Charges after approval u/s 12 of the Pharmacy Act, 1948.	Rs.50,000/- per annum for all specialization

Pharmacy Education Regulatory Charges for M.Pharm for Govt. Institutions / Central Universities /State Universities intending to start the new M.Pharm course -

Details	**Pharmacy Education Regulatory Charges**
For new courses	
1. Application Regulatory Charges for starting of M.Pharm course or increase in intake to be submitted with the application.	Rs.50,000/- per specialization
2. Approval u/s 12 of the Pharmacy Act, 1948.	Rs.50,000/- per specialization
3. Onsite verification of compliance/complaint, if any.	Rs.1,00,000/- per inspection
4. Annual affiliation Regulatory Charges after approval u/s 12 of the Pharmacy Act, 1948.	Rs.50,000/- per annum for all specializations

4. Procedure:

a) The procedure for submission of application is as under -

- Type on web browser www.pci.nic.in
- Click on DIGI-PHARMed as available on right corner.
- New page will be open. Click on "Institute Registration" corner.
- A registration Form namely "user Management" will open.
- For first time registration, the institute need to pay Rs.10,000/- as Pharmacy Education Regulatory Charges for registration to proceed further to fill up the application Form called SIF (Standard Inspection Form).

b) **For new institutions and existing institutions applying for new course**

Step-1

- Registration on PCI portal with submission of above cited documents.

Step-2

- Requirements with regard to submission of statutory documents as prescribed in Para 3 of the Scheme will be verified and deficiencies if any will be communicated by the PCI within 7 days after the submission of the documents.

- The institution shall submit the compliance within 7 days of the communication of the PCI and if found compliant the institution will be permitted to progress towards the SIF submission and payment of Pharmacy Education Regulatory Charges within the last date of the submission of the applications.
- In the event of compliance not being received within the 7 days or not found correct the registration will stand cancelled and the institution is free to re-register till the portal for registration is open.

Step-3

- In case application is complete / compliance of statutory documents is submitted, institution will apply in SIF and submit the prescribed Pharmacy Education Regulatory Charges. The said SIF will be processed for considering approval process.

c) The physical inspection will be conducted by the Pharmacy Council of India u/s 16 of the Pharmacy Act, 1948 for verification of the facilities.

d) A copy of the Inspection Report will be forwarded by the Pharmacy Council of India to the applicant for rectification of the deficiencies if any and submission of compliance report with documentary evidence.

e) The Inspection Report will be placed in the Executive Committee / Central Council of the Pharmacy Council of India and the decision arrived at will be communicated to the applicant.

f) The decision of the Central Council shall be final.

5. Services:

For following categories, an institution shall apply under "Services"

S.No.	Category	Documents to be submitted	Pharmacy Education Regulatory Charges (Rs.)
1.	Change in the name of institution / Trust	a) Resolution of governing body b) Affiliation of the Examining Authority with new name c) NOC / approval of the State Government for new name (applicable for B.Pharm)	50,000/-
2.	Change of address / location of institution	a) Resolution of governing body b) NOC of the Examining Authority with address c) NOC / approval of the State Government for address (applicable for B.Pharm)	75,000/-

S.No.	Category	Documents to be submitted	Pharmacy Education Regulatory Charges (Rs.)
3.	Change of Examining Authority	a) NOC of old Examining Authority b) Affiliation letter of new Examining Authority	50,000/-
4.	Change of hospital	MOU with new 300 bedded hospital	75,000/-
5.	Closure of course	a) Resolution of governing body b) Dis-affiliation letter from the Examining Authority	50,000/-
6.	Closure of institution	a) Resolution of governing body b) Dis-affiliation letter from the Examining Authority c) NOC / approval of the State Government for new name (applicable for B.Pharm) d) NOC of the Examining Authority	50,000/-

6. Syllabus:

The nomenclature of the various M.Pharm specialisations shall be as specified in "The Master of Pharmacy (M.Pharm) Course Regulations, 2014" and shown in the Table below:-

S.No.	Specialities / Subjects	Code
1.	Pharmaceutics	MPH
2.	Industrial Pharmacy	MIP
3.	Pharmaceutical Technology	MPT
4.	Pharmaceutical Chemistry	MPC
5.	Pharmaceutical Analysis	MPA
6.	Pharmaceutical Quality Assurance	MQA
7.	Regulatory Affairs	MRA
8.	Pharmaceutical Biotechnology	MBT
9.	Pharmacy Practice	MPP
10.	Pharmacology	MPL
11.	Pharmacognosy	MPG
12.	Phytopharmacy and Phytomedicine	MPM

The module of syllabus, equipments and reference books will be notified by the Pharmacy Council of India from time to time.

Annexure-I

On Letter head of the University
(to be enclosed with SIF)

Resolution of Board of Governors / Board of Management / Syndicate / Governing Council / Authority of the University

1. A meeting of Board of Governors / Board of Management / Syndicate / Governing Council / Authority of the University was held on _____.

2. It was decided to establish the following pharmacy courses in the institution -

   Tick (✓) relevant course in pharmacy

   D.Pharm ( )

   B.Pharm ( )

   * M.Pharm ( )

   ** Pharm.D/Pharm.D(PB) ( )

   ** B.Pharm (Practice) ( )

   * M.Pharm course cannot be started till B.Pharm course is approved u/s 12 of the Pharmacy Act, 1948 for the purpose of registration as a pharmacist. The B.Pharm institutions approved for conduct of B.Pharm course are not eligible to start M.Pharm course. However, the institutions established by the Central Government/State Govt. for the purpose of imparting postgraduate education shall be eligible for starting M.Pharm course directly.

   ** Pharm.D / Pharm.D (PB) / B.Pharm (Practice) course (s) cannot be started till B.Pharm course is approved u/s 12 of the Pharmacy Act, 1948 for the purpose of registration as a pharmacist. The B.Pharm institutions approved for conduct of B.Pharm course are not eligible to start Pharm.D / Pharm.D (PB) / B.Pharm (Practice) course (s).

3. A copy of the resolution of Board of Governors / Board of Management is enclosed as Annexure- A

Name of Registrar.....

Signature .....

Date.....

Annexure-II

On Letter head of the University
(to be enclosed with SIF)

It is hereby certified that examinations for the following pharmacy courses will be held as per the statutory provisions of the Pharmacy Act, 1948 and the Regulations framed there under -

Tick (✓) relevant course in pharmacy

D.Pharm	( )
B.Pharm	( )
***** M.Pharm	( )
****** Pharm.D/Pharm.D(PB)	( )
****** B.Pharm (Practice)	( )

* M.Pharm course cannot be started till B.Pharm course is approved u/s 12 of the Pharmacy Act, 1948 for the purpose of registration as a pharmacist. The B.Pharm institutions approved for conduct of B.Pharm course are not eligible to start M.Pharm course. However, the institutions established by the Central Government/State Govt. for the purpose of imparting postgraduate education shall be eligible for starting M.Pharm course directly.

** Pharm.D / Pharm.D (PB) / B.Pharm (Practice) course (s) cannot be started till B.Pharm course is approved u/s 12 of the Pharmacy Act, 1948 for the purpose of registration as a pharmacist. The B.Pharm institutions approved for conduct of B.Pharm course are not eligible to start Pharm.D / Pharm.D (PB) / B.Pharm (Practice) course (s).

Name and Signature of Registrar / Secretary of Board of Examining Authority
(applicable for stand alone D.Pharm institution)

Name : ____

Signature : ____

Date : ____

Annexure-III

Format for approval of the Examining Authority u/s 12(2) of the Pharmacy Act

(As approved by 73rd Central Council (Sept., 2004) under Item No.143)

Details of Examining Authority

A) Name of the Examining Authority with complete Postal Address _____

_____

_____

_____

_____

STD Code _____

Telephone _____

Fax No. _____

E-Mail _____

B) Name, Designation and Address of Vice Chancellor/Registrar _____

_____

_____

_____

_____

STD Code _____

Telephone _____

Office _____

Residence _____

Fax No. _____

E-Mail _____

C) Whether the Examining Authority is

- **Statutory Indian University** **Yes/No**
- **Body constituted by the Central or State Government** **Central Govt./State Govt.**

D) Name of the Pharmacy institutions affiliated to Examining Authority.

For D.Pharm course

_____

_____

_____

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_____

(If the number is more, please enclose the details as Appendix-I)

For B.Pharm course

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_____

(If the number is more, please enclose the details as Appendix-II)

For M.Pharm course

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_____

(If the number is more, please enclose the details as Appendix-III)

For Pharm.D and Pharm.D (PB) course

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(If the number is more, please enclose the details as Appendix-IV)

For B.Pharm (Practice) course

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_____
_____
_____
_____
_____
_____
_____
_____

(If the number is more, please enclose the details as Appendix-V)

E) Details of Examining Committee of Examining Authority -

S.No.	Name of Chairman (Pharmacy qualified persons) and Expert Member (Pharmacy qualified persons) of Examining Committee	Details of Employment				Signature
		Name of Instt. where presently employed	Designation	Qualification	Experience	
	Chairman: **Expert Member :**					

F) Norms for appointment of Examiners for Pharmacy Examination (Both Theory & Practicals) be enclosed.

G) <u>DETAILS OF EXAMINATION CENTRES APPROVED BY THE EXAMINING AUTHORITY.</u>

i) Please enclose List of Examination Centres approved by the Examining Authority for conduct of D.Pharm examination **(Appendix-VI).**

ii) Please enclose List of Examination Centres approved by the Examining Authority for conduct of B.Pharm examination **(Appendix-VII).**

iii) Whether following facilities are provided in the Examining Centres -

a) adequate rooms with necessary furniture for holding written examinations. — please enclose details as **Appendix-VIII**

b) Well equipped laboratories for holding practical exams. — please enclose details as **Appendix-IX**

H. <u>UNDERTAKING BY THE EXAMINING AUTHORITY TO FOLLOWING EFFECT</u> :

- It shall permit the Inspector or Inspectors of the Pharmacy Council of India to visit and inspect the examinations.

- It shall, if so required by a candidate, furnish the statement of marks secured by a candidate in the examinations after payment of prescribed fee, if any, to the Examining Authority.

- In pursuance of sub-section (3) of section 12 of the Pharmacy Act, 1948, the Examining Authority shall communicate to the Secretary, Pharmacy Council of India not less than six weeks in advance the dates fixed for examinations, the time-table for such examinations, so as to enable the Council to arrange for inspection of the examinations.

Name of the Registrar_____
(In Capital Letters)

Signature_____
with date

Seal of _____
the University

रजिस्ट्री सं० डी० एल०-33004/99 REGD. NO. D. L.-33004/99

भारत का राजपत्र
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भारतीय भेषजी परिषद्

अधिसूचना

नई दिल्ली, 10 दिसम्बर, 2014

भेषजी स्नातकोत्तर (एम.फार्म) पाठ्यक्रम विनियम, 2014

सं. 14-136/2014-भा.भे.परि.–भेषजी अधिनियम, 1948 (1948 का 8) की धारा 10 और 18 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए भारतीय भेषजी परिषद्, केन्द्रीय सरकार के अनुमोदन से निम्नलिखित विनियम बनाती है, अर्थात्

भेषजी स्नातकोत्तर (एम.फार्म.) पाठ्यक्रम विनियम, 2014

अध्याय-I

1. संक्षिप्त नाम और प्रारंभ :

1. इन विनियमों का नाम भेषजी स्नातकोत्तर (एम.फार्म.) पाठ्यक्रम विनियम, 2014 है।

2. ये सरकारी राजपत्र में प्रकाशन की तारीख से प्रवृत होंगे।

3. भेषजी स्नातकोत्तर (एम.फार्म.) में भेषजी अधिनियम, 1948 के अधीन वृति का व्यवसाय करने के लिए भेषजज्ञ के रूप में पंजीकरण/अर्हता अभिवृद्धि के प्रयोजनार्थ इन विनियमों में यथा विहित पाठ्यक्रम और परीक्षा उत्तीर्ण करने पर एक प्रमाण-पत्र दिया जाएगा।

2. पाठ्यक्रम की अवधि :

(क) स्नातकोत्तर पाठ्यक्रम की अवधि दो पूर्णकालिक शैक्षणिक वर्ष होगी और प्रत्येक शैक्षणिक वर्ष कम से कम दो सौ कार्य दिवस का होगा।

(ख) एम.फार्म. का अध्ययन वार्षिक पद्धति का होगा जिसके अंतर्गत शैक्षणिक अवधि के प्रारंभ से 12 मास तक विस्तारित एम.फार्म (भाग-1) और अगले 12 मास की अवधि का एम.फार्म (भाग-2) होगा।

(ग) एम.फार्म. (भाग-1) के अंत में एम.फार्म (भाग-1) की विश्वविद्यालय परीक्षा होगी। एम.फार्म. (भाग-2) के अंत में अभ्यर्थी विश्वविद्यालय द्वारा अनुमोदित विषय पर एक शोध निबंध (डेजरटेशन) प्रस्तुत करेगा।

अधिसूचना

नई दिल्ली, 10 दिसम्बर, 2014

भेषजी स्नातक (बी.फार्म) पाठ्यक्रम विनियम, 2014

संख्या 14-154/2010-भा.भे.परि.–भेषजी अधिनियम, 1948 (1948 का 8) की धारा 10 और 18 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए भारतीय भेषजी परिषद्, केन्द्रीय सरकार के अनुमोदन से निम्नलिखित विनियम बनाती है, अर्थात्

अध्याय - I

1. संक्षिप्त नाम और प्रारंभ –

(1) इन विनियमों का नाम भेषजी स्नातक (बी.फार्म) पाठ्यक्रम विनियम, 2014 है।

(2) ये राजपत्र में प्रकाशन की तारीख से प्रवृत होंगे।

2. भेषजी स्नातक के लिए भेषजी अधिनियम, 1948 के अधीन भेषजी वृति का व्यवसाय करने के लिए भेषजज्ञ के रूप में पंजीकरण के प्रयोजन के लिए इन विनियमों में यथा विहित पाठ्यक्रम का अध्ययन और परीक्षा उत्तीर्ण करने पर एक प्रमाणपत्र जारी किया जाएगा।

अध्याय - II

3. पाठ्यक्रम की अवधि –

भेषजी स्नातक : पाठ्यक्रम की अवधि पूर्णकालिक चार शैक्षणिक वर्ष (वार्षिक/सेमेस्टर) होगी। प्रत्येक शैक्षणिक वर्ष वार्षिक पद्धति के लिए कम से कम दो सौ कार्य दिवस और प्रत्येक सेमेस्टर के लिए एक सौ कार्य दिवस की अवधि का होगा।

4. प्रवेश के लिए न्यूनतम अर्हता –

क. प्रथम वर्ष भेषजी स्नातक – निम्नलिखित परीक्षाओं में से किसी में उत्तीर्ण –

i) अभ्यर्थी ने भारतीय विश्वविद्यालय संघ द्वारा 10+2 परीक्षा के समकक्ष मान्यता प्राप्त संबंधित राज्य/केन्द्रीय सरकार के प्राधिकरणों द्वारा संचालित 10+2 परीक्षा उत्तीर्ण की हो जिसमें एक विषय अंग्रेजी हो तथा भौतिकी, रसायन विज्ञान, गणित/जीव विज्ञान पृथक-पृथक वैकल्पिक विषय हो। तथापि, जिन छात्रों के पास अनौपचारिक और गैर कक्षा आधारित विद्यालयी संस्था जैसे, राष्ट्रीय मुक्त विद्यालयी परीक्षा शिक्षण संस्थान, राज्यों की मुक्त विद्यालय पद्धति आदि की 10+2 अर्हता है, वे भेषजी स्नातक पाठ्यक्रम में प्रवेश के लिए पात्र नहीं होंगे।"

ii) भारतीय भेषजी परिषद् द्वारा उपर्युक्त परीक्षाओं में से किसी के समकक्ष अनुमोदित कोई अन्य अर्हता ।

तथापि, पाठ्यक्रम में प्रवेश के वर्ष के 31 दिसम्बर या उससे पूर्व छात्र की आयु 17 वर्ष होनी चाहिए।

तथापि, यह कि अनुसूचित जातियों, अनुसूचित जन-जातियों और अन्य पिछड़े वर्गों के छात्रों के लिए सीटों का आरक्षण केन्द्रीय सरकार/राज्य सरकार/संघ क्षेत्र प्रशासन, जो भी हो, द्वारा समय-समय पर जारी किए गए अनुदेशों के अनुसार होगा।

ख. भेषजी स्नातक में बाद में प्रवेश (दूसरे वर्ष/तीसरे सेमेस्टर में)

भेषजी अधिनियम की धारा 12 के अधीन भारतीय भेषजी परिषद् द्वारा अनुमोदित संस्थान से डी.फार्म. पाठ्यक्रम में उत्तीर्ण ।

5. भेषजी स्नातक पाठ्यक्रम में प्रवेश संख्या उतनी होगी जो भारतीय भेषजी परिषद् द्वारा समय-समय पर निर्धारित की जाएगी।

6. **अध्ययन पाठ्यक्रम** - भेषजी स्नातक के अध्ययन पाठ्यक्रम के विषय तथा सिद्धांत पक्ष, व्यवहार पक्ष और अनुशिक्षणीय पक्ष में शिक्षण के प्रत्येक विषय के लिए एक सप्ताह में उतने घन्टे होंगे जितने भारतीय भेषजी द्वारा समय-समय पर निर्धारित किए जाएगें।

7. **व्यावहारिक प्रशिक्षण** : छात्र से अपेक्षित है कि वह 150 घण्टों का व्यवहारिक प्रशिक्षण प्राप्त करे

(क) भेषजी व्यवहार (अस्पताल/सामुदायिक भेषजी) अथवा

(ख) भेषजीय और सम्बद्ध उद्योगों में जो दूसरे वर्ष के पश्चात् अध्ययन क्रम के दौरान कम से कम एक मास की अवधि का हो।

8. **पाठ्य विवरण** - अध्ययन के हर विषय के लिए पाठ्य विवरण वह होगा जो भारतीय भेषजी परिषद् द्वारा समय-समय पर निर्धारित करेगी ।

9. अध्ययन पाठ्यक्रम संचालित करने वाले प्राधिकरण का अनुमोदन -

1) कोई व्यक्ति, संस्थान, सोसायटी, न्यास या विश्वविद्यालय भारतीय भेषजी परिषद् के पूर्व अनुमोदन के बिना भेषजी स्नातक कार्यक्रम प्रारंभ और संचालित नहीं करेगा।

2) भेषजी अधिनियम की धारा 12 की उपधारा (1) के अधीन अनुमोदन प्राप्त करने के प्रयोजन हेतु कोई व्यक्ति या भेषजी महाविद्यालय ऐसी स्कीम प्रस्तुत करेगा जो भारतीय भेषजी परिषद् द्वारा निर्धारित की गई हो।

3) ऊपर उपविनियम (2) में उल्लेखित स्कीम ऐसे प्रारूप में होगी और उसमें ऐसा विवरण होगा तथा ऐसी रीति से प्रस्तुत की जाएगा तथा उसके साथ ऐसी फीस संलग्न होगी जो निर्धारित की गई हो :

तथापि, भारतीय भेषजी परिषद् इन विनियमों के अधीन किसी संस्थान को तब तक अनुमोदित नहीं करेगी जब तक कि उसने इन विनियमों के परिशिष्ट 'क' में यथा निर्दिष्ट भवन, वास-सुविधा, प्रयोगशाला, उपकरण, शिक्षण कर्मचारीवृंद, गैर-शिक्षण कर्मचारीवृंद आदि के संबंध में अध्यापन के पर्याप्त इंतजाम न कर लिए हों।

10. **परीक्षा** -

1. भेषजी स्नातक के प्रत्येक शैक्षणिक वर्ष/सेमेस्टर के अंत में परीक्षा होगी।

2. प्रत्येक परीक्षा हर वर्ष दो बार अर्थात् नियमित और अनुपूरक परीक्षा आयोजित की जाएगी।

3. परीक्षा लिखित और व्यावहारिक (मौखिक परीक्षा समेत) होगी, प्रत्येक भाग के लिए अधिकतम अंक होंगे जो भारतीय भेषजी परिषद् द्वारा समय-समय पर निर्धारित किए जाएगे

11. परीक्षा में बैठने की पात्रता : परीक्षा में बैठने के लिए केवल वही छात्र पात्र होंगे जो उस संस्थान के प्रमुख का प्रमाण-पत्र प्रस्तुत करेंगे जिसमें उन्होंने हर विषय में सिद्धांत पक्ष और व्यवहार पक्ष दोनों में अलग-अलग आयोजित कम से कम 80 प्रतिशत कक्षाओं में हाजिर होकर अध्ययन पाठ्यक्रम पूरा किया हो।

12. **परीक्षा का ढंग** :

(1) सैद्धांतिक परीक्षा तीन घन्टे तथा व्यावहारिक परीक्षा चार घन्टे की होगी।

(2) जो छात्र किसी विषय की सैद्धांतिक या व्यावहारिक परीक्षा में उत्तीर्ण नहीं होगा वह यथास्थिति सैद्धांतिक या व्यावहारिक परीक्षा में दोबारा बैठेगा।

(3) व्यावहारिक परीक्षा में मौखिक परीक्षा भी शामिल होगी।

13. सत्र परीक्षा में अंक देना तथा अभिलेख का रख रखाव –

(1) भेषजी स्नातक पाठ्यक्रम का प्रशिक्षण देने वाले संस्थान में सैद्धांतिक और व्यावहारिक कक्षा कार्य और परीक्षाओं का नियमित अभिलेख हर छात्र के लिए रखा जाएगा तथा हर सैद्धांतिक विषय के लिए 25 अंक और हर व्यावहारिक विषय के लिए 25 अंक सत्रीय अंक के रूप में रखे जाएंगे।

(2) प्रत्येक शैक्षणिक वर्ष के दौरान कम से कम तीन आवधिक सत्र परीक्षाएं होंगी तथा सत्रीय अंकों की गणना किन्ही दो प्रदर्शनों के सर्वोच्च औसत पर आधारित होगी।

(3) व्यावहारिक विषयों में सत्रीय अंक निम्नलिखित आधार पर दिए जाएंगें :–

(i) सत्र परीक्षा में वास्तविक प्रदर्शन (15 अंक),

(ii) व्यावहारिक कक्षा कार्य, तत्परता, मौखिक परीक्षा, अभिलेख रखने आदि का दैनिक मूल्यांकन (10 अंक)

14. **परीक्षा उत्तीर्ण करने के लिए न्यूनतम अंक** – कोई छात्र तब तक परीक्षा में उत्तीर्ण घोषित नहीं किया जाएगा जब तक कि उसने सत्र अंकों समेत सैद्धांतिक या व्यावहारिक परीक्षाओं में हर विषय में पृथक-पृथक कम से कम 50% अंक प्राप्त न किए हों। भेषजी स्नातक में एक ही प्रयास में सब विषयों में कुल 60% या इससे अधिक अंक प्राप्त करने वाले छात्रों को प्रथम श्रेणी में उत्तीर्ण घोषित किया जाएगा। किसी विषय या किन्हीं विषयों में 75% या इससे अधिक अंक प्राप्त करने वाले छात्रों की उस विषय या उन विषयों में विशेष योग्यता के साथ उत्तीर्ण घोषित किया जायेगा बशर्ते कि सब विषय एक ही प्रयास में उत्तीर्ण किए हों।

14(क). **अगले वर्ष में प्रौन्नति के लिए पात्रता** – वे सभी छात्र, जो सभी विषयों में बैठे हैं और प्रथम वर्ष की वार्षिक परीक्षा में उत्तीर्ण हुए हैं, दूसरे वर्ष में प्रोन्नति के लिए पात्र हैं आदि आदि। फिर भी दो से अधिक विषयों में असफल छात्र अगले वर्ष की कक्षा में प्रोन्नति से वंचित हो जाएंगे।

15. **परीक्षाओं का अनुमोदन** – विनियम 10 से 12 और 14 में वर्णित परीक्षाएं उस परीक्षा प्राधिकरण द्वारा आयोजित की जाएंगी जो भेषजी अधिनियम 1948 की धारा 12 की उपधारा (2) के अधीन भारतीय भेषजी परिषद् द्वारा अनुमोदित हो। ऐसा अनुमोदन तभी दिया जाएगा जब संबंधित परीक्षा प्राधिकरण इन विनियमों के परिशिष्ट (ख) में विनिर्दिष्ट शर्तों को पूरा करता हो।

16. **परीक्षा उत्तीर्ण करने का प्रमाण-पत्र** – हर छात्र जो भेषजी स्नातक की परीक्षाएं उत्तीर्ण कर लेगा उसे परीक्षा प्राधिकरण द्वारा प्रमाण-पत्र दिया जाएगा।

परिशिष्ट (क)

(विनियम 9 देखिए)

शैक्षणिक प्रशिक्षण संस्था द्वारा पूरी की जाने वाली शर्तें

1. भेषजी अधिनियम 1948 की धारा 12 की उपधारा (1) के अधीन भेषजी स्नातक के लिए अध्ययन पाठ्यक्रम के अनुमोदन के लिए भारतीय भेषजी परिषद् में आवेदन करने वाला कोई प्राधिकरण या संस्था भारतीय भेषजी परिषद् द्वारा समय-समय पर निर्धारित अवसंरचनात्मक सुविधाओं का अनुपालन करेगा ।

2. भेषजी स्नातक कार्यक्रम केवल उन्हीं संस्थाओं द्वारा संचालित किए जाएंगे जो भेषजी अधिनियम 1948 की धारा 12 के उपबन्धों के अनुसार भेषजी स्नातक के लिए भारतीय भेषजी परिषद् द्वारा अनुमोदित है।

3. **शिक्षण कर्मचारी वृन्द**

(i) कर्मचारी प्रतिरूप (पैटर्न) : सभी शिक्षक पूर्णकालिक होंगे

(ii) निदेशक/प्रधानाचार्य/संस्था प्रमुख – 1

(iii) विभाग/प्रभाग वार शिक्षण कर्मचारीवृंद

विभाग/प्रभाग	पदनाम	संख्या (60 दाखिलों के लिए)	संख्या (100 दाखिलों के लिए)
फार्मास्यिूटिक्स विभाग	प्रोफेसर/सह प्रोफेसर	1	1
	सहायक प्रोफेसर	1	2
	प्राध्यापक	2	3
फार्मास्यिूटिकल कैमिस्ट्री विभाग (फार्मास्यिूटिकल एनालेसिस सहित)	प्रोफेसर/सह प्रोफेसर	1	1
	सहायक प्रोफेसर	1	2
	प्राध्यापक	3	3
फार्माकोलॉजी विभाग	प्रोफेसर/सह प्रोफेसर	1	1
	सहायक प्रोफेसर	1	1
	प्राध्यापक	2	3
फार्माकोग्नोसी विभाग	प्रोफेसर/सह प्रोफेसर	1	1
	सहायक प्रोफेसर	1	1
	प्राध्यापक	1	1
फार्मेसी प्रैक्टिस तथा संबंधित विषय विभाग	प्रोफेसर/सह प्रोफेसर	-	1
	सहायक प्रोफेसर	1	1
	प्राध्यापक	1	1

(iv) निदेशक/प्रधानाचार्य/संस्था प्रमुख/विभागाध्यक्ष सहित शिक्षकों की अर्हताएं और अनुभव "भेषजी संस्थानो में शिक्षको की न्यूनतम योग्यता विनियम, 2014" में निहित न्यूनतम अर्हता के अनुरूप होंगे।

(v) शिक्षकों का कार्यभार :-

प्रोफेसर/सह प्रोफेसर - 8 घण्टे प्रति सप्ताह
सहायक प्रोफेसर - 12 घण्टे प्रति सप्ताह
प्राध्यापक - 16 घण्टे प्रति सप्ताह

4. <u>गैर - शिक्षण कर्मचारी</u>

क्रमांक	पदनाम	अपेक्षित संख्या (न्यूनतम)	अपेक्षित अर्हता
1	प्रयोगशाला तकनीशियन	प्रत्येक विभाग के लिए एक	डी.फार्म.
2	प्रयोगशाला सहायक या प्रयोगशाला परिचर	प्रत्येक प्रयोगशाला के लिए एक (कम से कम)	एस.एस.एल.सी.
3	कार्यालय अधीक्षक	1	डिग्री
4	लेखापाल	1	डिग्री
5	भंडारी	1	किसी विश्वविद्यालय या संस्था द्वारा मान्यता प्राप्त डी.फार्म. या स्नातक डिग्री
6	कंप्यूटर डाटा आपरेटर	1	बी.सी.ए. अथवा कंप्यूटर पाठ्यक्रम में स्नातक
7	कार्यालय कर्मचारी I	1	डिग्री
8	कार्यालय कर्मचारी II	2	डिग्री
9	चपरासी	2	एस.एस.एल.सी.
10	सफाई कार्मिक	यथोचित	-
11	माली	यथोचित	-

5. <u>आवास</u>

प्रधानाचार्य अथवा विभागाध्यक्ष के कक्षों, कार्यालय, कक्षाओं, पुस्तकालय, कर्मचारीवृंद, स्टाफ कामन कक्ष, छात्र कामन कक्ष, संग्रहालय, प्रयोगशालाओं, भंडारों आदि के लिए पर्याप्त संवातन, प्रकाश और अन्य स्वास्थ्यकर अवस्थाओं से युक्त उपयुक्त और पर्याप्त आवास की व्यवस्था होनी चाहिए।

निम्नांकित के लिए आठ प्रयोगशालाओं के साथ-साथ कम से कम दो व्याख्यान कक्ष होने चाहिए -

1. फार्मास्यिूटिक्स एण्ड फार्माकोकिनेटिक्स प्रयोगशाला - 2
2. लाइफ साइंस (फार्माकोलॉजी, फिजियोलाजी, पैथोफिजियोलाजी) - 2

3. फार्मास्यिूटिकल कैमिस्ट्री	-	2
4. फार्माकोग्नोसी	-	1
5. फार्मास्यिूटिकल एनालेसिस	-	1
योग	-	8

प्रयोगशालाओं के अलावा, तुला कक्ष, सेप्टिकरोधी कक्ष या केबिनेट, पशुशाला और मशीन कक्ष की भी व्यवस्था होनी चाहिए।

प्रयोगशाला का फर्श क्षेत्रफल किसी भी समय प्रयोगशाला में कार्य करने के लिए प्रतिछात्र कम से कम 30 वर्ग फुट होना चाहिए जो तैयारी कक्ष सहित कम से कम 900 वर्ग फुट अवश्य हो।

प्रयोगशालाओं की फिटिंग और उसका निर्माण ऐसी रीति से किया गया हो कि उन्हें ठीक से स्वच्छ रखा जा सके। जहां आवश्यक हो वहां गैस और पानी की फिटिंग, शैल्फ, फ्यूमिंग अलमारियों की व्यवस्था होनी चाहिए।

6. <u>उपस्कर और उपकरण</u>

विभिन्न विभागों के लिए अपेक्षित उपस्कर और उपकरण वह होंगे जो भारतीय भेषजी परिषद् द्वारा समय-समय पर निर्धारित किए जाऐंगे ।

<u>परिशिष्ट (ख)</u>

(विनियम 15 देखिए)

परीक्षा प्राधिकरण द्वारा पूरी की जाने वाली शर्तें

1. परीक्षा प्राधिकरण केन्द्रीय सरकार/राज्य सरकार/संघ-क्षेत्र प्रशासन द्वारा गठित विश्वविद्यालय अथवा डीम्ड यूनिवर्सिटी होगी जिसके द्वारा यह सुनिश्चित किया जाए कि परीक्षा केन्द्रों पर परीक्षाओं में अनुशासन और शालीनता का कड़ाई से पालन हो।

2. वह भारतीय भेषजी परिषद् के निरीक्षक या निरीक्षकों को परीक्षाओं में जाने और उनका निरीक्षण करने देगा।

3. वह निम्नलिखित व्यवस्थाएं भी करेगा –

   (क) लिखित परीक्षाएं आयोजित करने के लिए आवश्यक फर्नीचर युक्त पर्याप्त कक्ष ;

   (ख) प्रायोगिक परीक्षा लेने के लिए साधन संपन्न प्रयोगशालाएं ;

   (ग) परीक्षा संचालित करने और अन्वीक्षण करने के लिए प्रर्याप्त योग्य और जिम्मेदार परीक्षक ; तथा

   (घ) ऐसी अन्य सुविधाएं जो परीक्षाओं के दक्षतापूर्ण तथा उचित संचालन के लिए आवश्यक हों।

4. यदि किसी अभ्यर्थी द्वारा ऐसा अपेक्षित हो तो वह परीक्षा प्राधिकरण को विहित शुल्क, यदि कोई है, लेने के बाद परीक्षा में अभ्यर्थी द्वारा प्राप्त अंकों का विवरण देगा।

5. वह ऐसे परीक्षकों की नियुक्ति करेगा जिनकी अर्हताएं संबंधित विषयों के शिक्षकों की अर्हताओं के समकक्ष हों जो भेषजी संस्थाओं में शिक्षकों की न्यूनतम योग्यता विनियम 2014 में निहित है।

6. भेषजी अधिनियम 1948 की धारा 12 की उपधारा (3) के अनुसरण में परीक्षा प्राधिकरण भारतीय भेषजी परिषद् के सचिव को परीक्षाओं के लिए नियत तारीखें ऐसी परीक्षाओं की समय-सारणी, परीक्षा से कम से कम 6 सप्ताह पहले संसूचित करेगा जिससे कि परिषद् ऐसी परीक्षाओं में उपस्थित रहने के लिए निरीक्षण दल का इंतजाम कर सके।

7. परीक्षा प्राधिकरण यह सुनिश्चित करेगा कि भेषजी स्नातक कार्यक्रम के लिए परीक्षा आयोजित करने के लिए परीक्षक ऐसे व्यक्ति हों जिनके पास भेषजी अर्हता हो और जो किसी अनुमोदित संस्था में भेषजी स्नातक कार्यक्रम के शिक्षण में भाग लेते हों।

अर्चना मुद्गल, निबंधक-एवं-सचिव

[विज्ञापन III/4/असा./101/14]

NOTIFICATION

New Delhi, the 10th December, 2014

The Bachelor of Pharmacy (B.Pham.) Course Regulations, 2014

No. 14-154/ 2010- PCI.—In exercise of the powers conferred by Section 10 and 18 of the Pharmacy Act, 1948 (8 of 1948), the Pharmacy Council of India, with the approval of the Central Government hereby makes the following regulations; namely–

CHAPTER-I

1. **Short title and commencement –**

(1) These regulations may be called the Bachelor of Pharmacy (B.Pharm) Course Regulations, 2014.

(2) They shall come into force from the date of their publication in the official Gazette.

2. B. Pharm shall consist of a certificate, having passed the course of study and examination as prescribed in these regulations, for the purpose of registration as a pharmacist to practice the profession under the Pharmacy Act, 1948.

CHAPTER-II

3. Duration of the course. –

B. Pharm: The duration of the course shall be four academic years (annual/semester) full time with each academic year spread over a period of not less than two hundred working days for annual pattern and hundred working days for each semester.

4. Minimum qualification for admission to –

A. First year B. Pharm – A pass in any of the following examinations -

i. Candidate shall have passed 10+2 examination conducted by the respective state/central government authorities recognized as equivalent to 10+2 examination by the Association of Indian Universities (AIU) with English as one of the subjects and Physics, Chemistry, Mathematics/Biology as optional subjects individually. "However, the students possessing 10+2 qualification from non-formal and non-class rooms based schooling such as National Institute of Open Schooling, open school systems of States etc. shall not be eligible for admission to B.Pharm Course."

ii. Any other qualification approved by the Pharmacy Council of India as equivalent to any of the above examinations.

Provided that a student should complete the age of 17 years on or before 31st December of the year of admission to the course.

Provided that there shall be reservation of seats for the students belonging to the Scheduled Castes, Scheduled Tribes and other Backward Classes in accordance with the instructions issued by the Central Government/State Government/Union Territory Administration as the case may be from time to time.

B. B. Pharm lateral entry (to second year/third semester) -

A pass in D. Pharm course from an institution approved by the Pharmacy Council of India under section 12 of the Pharmacy Act.

5. Number of admissions in B. Pharm course shall be as prescribed by the Pharmacy Council of India from time to time.

6. Course of study. – The course of study for B. Pharm shall include the subjects, number of hours in a week devoted to each subject for its teaching in theory, practical and tutorial as may be prescribed by the Pharmacy Council of India from time to time.

7. Practical Training: The student is required to undergo practical training of 150 hrs either in (A) Pharmacy Practice (Hospital/Community pharmacy) or (B) Pharmaceutical and allied Industries spread over a period of not less than one month during the course of study after second year.

8. Syllabus. – The syllabus for each subject of study shall be as prescribed by the Pharmacy Council of India from time to time.

9. Approval of the authority conducting the course of study. –

1. No person, institution, society, trust or university shall start and conduct B. Pharm programme without the prior approval of the Pharmacy Council of India.

2. Any person or pharmacy college for the purpose of obtaining permission under sub-section (1) of section 12 of the Pharmacy Act, shall submit a scheme as may be prescribed by the Pharmacy Council of India.

3. The scheme referred to in sub-regulation (2) above, shall be in such form and contain such particulars and be preferred in such manner and be accompanied with such fee as may be prescribed:

Provided that the Pharmacy Council of India shall not approve any institution under these regulations unless it provides adequate arrangements for teaching in regard to building, accommodation, labs., equipments, teaching staff, non-teaching staff, etc., as specified in Appendix-A to these regulations.

10. Examination. –

1. There shall be an examination at the end of each academic year/semester of B.Pharm.

2. Each examination may be held twice every year namely regular and supplementary examination.

3. The examinations shall be of written and practical (including oral nature) carrying maximum marks for each part as may be prescribed by the Pharmacy Council of India from time to time.

11. Eligibility for appearing Examination.— Only such students who produce certificate from the Head of the Institution in which he or she has undergone the course of study by attending not less than 80% of the classes held both in theory and practicals separately in each subject shall be eligible for appearing at examination.

12. **Mode of examinations.—**

(1) Theory examination shall be of three hours and practical examination shall be of four hours duration.

(2) A candidate who fails in theory or practical examination of a subject shall re-appear in theory or practical as the case may be.

(3) Practical examination shall also consist of a viva –voce (Oral) examination.

13. **Award of sessional marks and maintenance of records—**

(1) A regular record of both theory and practical class work and examinations conducted in an institution imparting training for B. Pharm course, shall be maintained for each student in the institution and 25 marks for each theory and 25 marks for each practical subject shall be allotted as sessional marks.

(2) There shall be at least three periodic sessional examinations during each academic year and the highest aggregate of any two performances shall form the basis of calculating sessional marks.

(3) The sessional marks in practicals shall be allotted on the following basis:-

(i) Actual performance in the sessional examination (15 marks);

(ii) Day to day assessment in the practical class work, promptness, viva-voce, record maintenance, etc. (10 marks).

14. Minimum marks for passing examination.— A student shall not be declared to have passed examination unless he or she secures at least 50% marks in each of the subjects separately in the theory and practical examinations, including sessional marks. **The students securing 60% marks or above in aggregate in all subjects in a single attempt at B. Pharm shall be declared to have passed in the First Class. Students securing 75% marks or above in any subject or subjects shall be declared to have passed with distinction in the subject or those subjects provided he / she passes in all the subjects in a single attempt.**

14 (a). Eligibility for the promotion to the next year. – All the students who have appeared for all the subjects and passed the First year Annual Examination are Eligible for promotion to the second year and so on. However, failure in more than two subjects shall debar him /her from promotion to the next year classes.

15. Approval of examinations.— Examinations mentioned in regulations 10 to12 and 14 shall be held by the examining authority which shall be approved by the Pharmacy Council of India under sub-section (2) of section 12 of the Pharmacy Act, 1948. Such approval shall be granted only if the examining authority concerned fulfills the conditions as specified in Appendix–(B) to these regulations.

16. Certificate of passing examination.— Every student who has passed the examinations for the B. Pharm shall be granted a certificate by the examining authority.

APPENDIX- (A)

(See regulation 9)

CONDITIONS TO BE FULFILLED BY THE ACADEMIC TRAINING INSTITUTION

1) Any authority or institution in India applying to the Pharmacy Council of India for approval of courses of study for B. Pharm. under sub-section (1) of section 12 of the Pharmacy Act, 1948 shall comply with the infrastructural facilities as prescribed by the Pharmacy Council of India from time to time.

2) B. Pharm. programmes shall be conducted only in those institutions which are approved by the Pharmacy Council of India for B.Pharm course as provided under section 12 of the Pharmacy Act, 1948;

3) **TEACHING STAFF REQUIREMENT**

(i) Staff Pattern: All faculty shall be full time.

(ii) Director/Principal/HOI - 1

(iii) Department/Division-Wise Teaching Staff:

Department/Division	**Name of the post**	**No.(for 60 admissions)**	**No.(for 100 admissions)**
Department of Pharmaceutics	Professor/Associate Professor	1	1
	Asst. Professor	1	2
	Lecturer	2	3
Department of Pharmaceutical Chemistry (Including Pharmaceutical Analysis)	Professor/Associate Professor	1	1
	Asst. Professor	1	2
	Lecturer	3	3
Department of Pharmacology	Professor/Associate Professor	1	1
	Asst. Professor	1	1
	Lecturer	2	3
Department of Pharmacognosy	Professor/Associate Professor	1	1
	Asst. Professor	1	1
	Lecturer	1	1
Department of Pharmacy Practice & related subjects	Professor/Associate Professor	-	1
	Asst. Professor	1	1
	Lecturer	1	1

iii) Qualification and experience for teaching faculty including Director/Principal/ Head of Instt./Head of Deptt. shall be as per the Minimum Qualification for Teachers in Pharmacy Institutions Regulations, 2014.

iv) Workload of Faculty :

Professor/Associate Professor – 8 hrs. per week

Assistant Professor – 12 hrs. per week

Lecturers – 16 hrs. per week

4) **NON-TEACHING STAFF :**

Sl.No.	**Designation**	**Required (Minimum)**	**Required Qualification**
1	Laboratory Technician	1 for each Dept	D. Pharm
2	Laboratory Assistants or Laboratory Attenders	1 for each Lab (minimum)	SSLC
3	Office Superintendent	1	Degree
4	Accountant	1	Degree
5	Store keeper	1	D.Pharm or a Bachelor degree recognized by a University or institution.
6	Computer Data Operator	1	BCA or Graduate with Computer Course
7	Office Staff I	1	Degree
8	Office Staff II	2	Degree
9	Peon	2	SSLC
10	Cleaning personnel	Adequate	---
11	Gardener	Adequate	---

5) **ACCOMMODATION :**

Suitable and sufficient accommodation with adequate ventilation, lighting and other hygienic conditions should be provided to the rooms for Principal or the Head of the department, office, class rooms, library, staff, staff common room, students' common room, museum, laboratories, stores, etc.

At least two lecture halls along with eight laboratories as specified below should be provided for: —

1. Pharmaceutics and Pharmacokinetics Lab	- 2
2. Life Science (Pharmacology, Physiology, Pathophysiology)	- 2
3. Pharmaceutical Chemistry	- 2
4. Pharmacognosy	- 1
5. Pharmaceutical Analysis	- 1

	Total = 8

In addition to the laboratories, balance room, aseptic room or cabinet, animal house and a machine room shall also be provided.

Floor area of the laboratory should not be less than 30 square feet per student required to work in the laboratory at any given time subject to a minimum of 900 square feet including Preparation Room.

Laboratories should be fitted and constructed in a manner that these can be kept reasonably clean. Gas and water fittings, shelves, fuming cupboards be provided wherever necessary.

6. EQUIPMENT AND APPARATUS :

The details of equipments and apparatus required for various departments shall be as prescribed by the Pharmacy Council of India from time to time.

APPENDIX - B

(See regulation 15)

CONDITIONS TO BE FULFILLED BY THE EXAMINING AUTHORITY

1. The Examining Authority shall be a Indian University constituted by the Central Government/State Government/Union Territory Administration or a Deemed to be University. It shall ensure that discipline and decorum of the examinations are strictly observed at the examination centers.
2. It shall permit the Inspector or Inspectors of the Pharmacy Council of India to visit and inspect the examinations.
3. It shall provide:-
   (a) adequate rooms with necessary furniture for holding written examinations;
   (b) well-equipped laboratories for holding practical examinations;
   (c) an adequate number of qualified and responsible examiners and staff to conduct and invigilate the examinations; and
   (d) such other facilities as may be necessary for efficient and proper conduct of examinations.
4. It shall, if so required by a candidate, furnish the statement of marks secured by a candidate in the examinations after payment of prescribed fee, if any, to the Examining Authority.
5. It shall appoint examiners whose qualifications should be similar to those of the teachers in the respective subjects as prescribed in the Minimum Qualification for Teachers in Pharmacy Institutions Regulations, 2014.
6. In pursuance of sub–section (3) of section 12 of the Pharmacy Act, 1948, the Examining Authority shall communicate to the Secretary, Pharmacy Council of India, not less than six weeks in advance the dates fixed for examinations, the time-table for such examinations, so as to enable the Council to arrange for inspection teams to attend at such examinations.
7. The Examining Authority shall ensure that examiners for conducting examination for B. Pharm. programme shall be persons possessing pharmacy qualification and are actually involved in the teaching of the B. Pharm. programme in an approved institution.

ARCHNA MUDGAL, Registrar-cum-Secy.

[ADVT. III/4/Exty./101/14]

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सत्यमेव जयते

भारत का राजपत्र
The Gazette of India

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इस भाग में भिन्न पृष्ठ संख्या दी जाती है जिससे कि यह अलग संकलन के रूप में रखा जा सके।

(Separate paging is given to this Part in order that it may be filed as a separate compilation)

भाग III—खण्ड 4

[PART III—SECTION 4]

[सांविधिक निकायों द्वारा जारी की गई विविध अधिसूचनाएं जिसमें कि आदेश, विज्ञापन और सूचनाएं सम्मिलित हैं]

[Miscellaneous Notifications including Notifications, Orders, Advertisements and Notices issued by Statutory Bodies]

भारतीय रिज़र्व बैंक

मुंबई-400001, दिनांक 9 अप्रैल 2008

सदर्भ : बैंपविवि. सं. आईबीडी.-14241/23.13.048/2007-08--भारतीय रिज़र्व बैंक अधिनियम, 1934 (1934 का 2) की धारा 42 की उप-धारा (6) के खण्ड (ग) के अनुसरण में भारतीय रिज़र्व बैंक इसके द्वारा निदेश देता है कि उक्त अधिनियम की दूसरी अनुसूची में निम्नलिखित परिवर्तन किये जाएं :--

''अरब बांगलादेश बैंक लिमिटेड'' शब्दों के स्थान पर ''एबी बैंक लिमिटेड'' शब्द होंगे।

आनन्द सिन्हा

कार्यपालक निदेशक

[PUBLISHED IN THE GAZETTE OF INDIA, No.19, PART III, SECTION 4]

Ministry of Health and Family Welfare
(Pharmacy Council of India)

New Delhi, 10th May, 2008.

Pharm.D. Regulations 2008

Regulations framed under section 10 of the Pharmacy Act, 1948 (8 of 1948).

(As approved by the Government of India, Ministry of Health vide, letter No.V.13013/1/2007-PMS, dated the 13th March, 2008 and notified by the Pharmacy Council of India).

No.14-126/2007-PCI.— In exercise of the powers conferred by section 10 of the Pharmacy Act, 1948 (8 of 1948), the Pharmacy Council of India, with the approval of the Central Government, hereby makes the following regulations, namely:-

CHAPTER-I

1. Short title and commencement. – (1) These regulations may be called the Pharm.D. Regulations 2008.

   (2) They shall come into force from the date of their publication in the official Gazette.

2. Pharm.D. shall consist of a certificate, having passed the course of study and examination as prescribed in these regulations, for the purpose of registration as a pharmacist to practice the profession under the Pharmacy Act, 1948.

CHAPTER-II

3. Duration of the course. –

a) Pharm.D: The duration of the course shall be six academic years (five years of study and one year of internship or residency) full time with each academic year spread over a period of not less than two hundred working days. The period of six years duration is divided into two phases –

Phase I – consisting of First, Second, Third, Fourth and Fifth academic year.

Phase II – consisting of internship or residency training during sixth year involving posting in speciality units. It is a phase of training wherein a student is exposed to actual pharmacy practice or clinical pharmacy services and acquires skill under supervision so that he or she may become capable of functioning independently.

b) Pharm.D. (Post Baccalaureate): The duration of the course shall be for three academic years (two years of study and one year internship or residency) full time with each academic year spread over a period of not less than two hundred working days. The period of three years duration is divided into two phases –

Phase I – consisting of First and Second academic year.
Phase II – consisting of Internship or residency training during third year involving posting in speciality units. It is a phase of training wherein a student is exposed to actual pharmacy practice or clinical pharmacy services, and acquires skill under supervision so that he or she may become capable of functioning independently.

4. Minimum qualification for admission to. –

a) Pharm.D. Part-I Course – A pass in any of the following examinations -

(1) 10+2 examination with Physics and Chemistry as compulsory subjects along with one of the following subjects:

Mathematics or Biology.

(2) A pass in D.Pharm course from an institution approved by the Pharmacy Council of India under section 12 of the Pharmacy Act.

(3) Any other qualification approved by the Pharmacy Council of India as equivalent to any of the above examinations.

Provided that a student should complete the age of 17 years on or before 31st December of the year of admission to the course.

Provided that there shall be reservation of seats for the students belonging to the Scheduled Castes, Scheduled Tribes and other Backward Classes in accordance with the instructions issued by the Central Government/State Government/Union Territory Administration as the case may be from time to time.

b) Pharm.D. (Post Baccalaureate) Course -

A pass in B.Pharm from an institution approved by the Pharmacy Council of India under section 12 of the Pharmacy Act:

Provided that there shall be reservation of seats for the students belonging to the Scheduled Castes, Scheduled Tribes and other Backward Classes in accordance with the instructions issued by the Central Government/State Government/Union Territory Administration as the case may be from time to time.

5. Number of admissions in the above said programmes shall be as prescribed by the Pharmacy Council of India from time to time and presently be restricted as below –
   i) Pharm.D. Programme – 30 students.
   ii) Pharm.D. (Post Baccalaureate) Programme – 10 students.

6. Institutions running B.Pharm programme approved under section 12 of the Pharmacy Act, will only be permitted to run Pharm.D. programme. Pharm.D. (Post Baccalaureate) programme will be permitted only in those institutions which are permitted to run Pharm.D. programme.

7. Course of study. – The course of study for Pharm.D. shall include the subjects as given in the Tables below. The number of hours in a week, devoted to each subject for its teaching in theory, practical and tutorial shall not be less than that noted against it in columns (3), (4) and (5) below.

T A B L E S

First Year :

S.No.	Name of Subject	No. of hours of Theory	No. of hours of Practical	No. of hours of Tutorial
(1)	(2)	(3)	(4)	(5)
1.1	Human Anatomy and Physiology	3	3	1
1.2	Pharmaceutics	2	3	1
1.3	Medicinal Biochemistry	3	3	1
1.4	Pharmaceutical Organic Chemistry	3	3	1
1.5	Pharmaceutical Inorganic Chemistry	2	3	1
1.6	Remedial Mathematics/ Biology	3	3*	1
	Total hours	**16**	**18**	**6 = (40)**

* For Biology

Second Year:

S.No	Name of Subject	No. of hours of Theory	No. of hours of Practical	No. of hours of Tutorial
(1)	**(2)**	**(3)**	**(4)**	**(5)**
2.1	Pathophysiology	3	-	1
2.2	Pharmaceutical Microbiology	3	3	1
2.3	Pharmacognosy & Phytopharmaceuticals	3	3	1
2.4	Pharmacology-I	3	-	1
2.5	Community Pharmacy	2	-	1
2.6	Pharmacotherapeutics-I	3	3	1
	Total Hours	**17**	**9**	**6 = 32**

Third Year:

S.No.	Name of Subject	No. of hours of Theory	No. of hours of Practical	No. of hours of Tutorial
(1)	**(2)**	**(3)**	**(4)**	**(5)**
3.1	Pharmacology-II	3	3	1
3.2	Pharmaceutical Analysis	3	3	1
3.3	Pharmacotherapeutics-II	3	3	1
3.4	Pharmaceutical Jurisprudence	2	-	-
3.5	Medicinal Chemistry	3	3	1
3.6	Pharmaceutical Formulations	2	3	1
	Total hours	**16**	**15**	**5 = 36**

Fourth Year:

S.No.	Name of Subject	No. of hours of Theory	No. of hours of Practical/ Hospital Posting	No. of hours of Tutorial
(1)	**(2)**	**(3)**	**(4)**	**(5)**
4.1	Pharmacotherapeutics-III	3	3	1
4.2	Hospital Pharmacy	2	3	1
4.3	Clinical Pharmacy	3	3	1
4.4	Biostatistics & Research Methodology	2	-	1
4.5	Biopharmaceutics & Pharmacokinetics	3	3	1
4.6	Clinical Toxicology	2	-	1
	Total hours	**15**	**12**	**6 = 33**

Fifth Year:

S.No.	Name of Subject	No. of hours of Theory	No. of hours of Hospital posting*	No. of hours of Seminar
(1)	**(2)**	**(3)**	**(4)**	**(5)**
5.1	Clinical Research	3	-	1
5.2	Pharmacoepidemiology and Pharmacoeconomics	3	-	1
5.3	Clinical Pharmacokinetics & Pharmacotherapeutic Drug Monitoring	2	-	1
5.4	Clerkship *	-	-	1
5.5	Project work (Six Months)	-	20	-
	Total hours	**8**	**20**	**4 = 32**

***** Attending ward rounds on daily basis.

Sixth Year:

Internship or residency training including postings in speciality units. Student should independently provide the clinical pharmacy services to the allotted wards.

(i) Six months in General Medicine department, and
(ii) Two months each in three other speciality departments

8. Syllabus. – The syllabus for each subject of study in the said Tables shall be as specified in Appendix -A to these regulations.

9. Approval of the authority conducting the course of study. – (1) No person, institution, society or university shall start and conduct Pharm.D or Pharm.D. (Post Baccalaureate) programme without the prior approval of the Pharmacy Council of India.

(2) Any person or pharmacy college for the purpose of obtaining permission under sub-section (1) of section 12 of the Pharmacy Act, shall submit a scheme as prescribed by the Pharmacy Council of India.

(3) The scheme referred to in sub-regulation (2) above, shall be in such form and contain such particulars and be preferred in such manner and be accompanied with such fee as may be prescribed:

Provided that the Pharmacy Council of India shall not approve any institution under these regulations unless it provides adequate arrangements for teaching in regard to building, accommodation, labs., equipments, teaching staff, non-teaching staff, etc., as specified in Appendix-B to these regulations.

10. Examination. – (1) Every year there shall be an examination to examine the students.

(2) Each examination may be held twice every year. The first examination in a year shall be the annual examination and the second examination shall be supplementary examination.

(3) The examinations shall be of written and practical (including oral nature) carrying maximum marks for each part of a subject as indicated in Tables below :

T A B L E S

First Year examination :

S.No.	Name of Subject	Maximum marks for Theory			Maximum marks for Practicals		
		Examination	Sessional	Total	Examination	Sessional	Total
1.1	Human Anatomy and Physiology	70	30	100	70	30	100
1.2	Pharmaceutics	70	30	100	70	30	100
1.3	Medicinal Biochemistry	70	30	100	70	30	100
1.4	Pharmaceutical Organic Chemistry	70	30	100	70	30	100
1.5	Pharmaceutical Inorganic Chemistry	70	30	100	70	30	100
1.6	Remedial Mathematics/ Biology	70	30	100	70*	30*	100*
				600			600 = 1200

* for Biology.

Second Year examination :

S.No.	Name of Subject	Maximum marks for Theory			Maximum marks for Practicals		
		Examination	Sessional	Total	Examination	Sessional	Total
2.1	Pathophysiology	70	30	100	-	-	-
2.2	Pharmaceutical Microbiology	70	30	100	70	30	100
2.3	Pharmacognosy & Phytopharmaceuticals	70	30	100	70	30	100
2.4	Pharmacology-I	70	30	100	-	-	-
2.5	Community Pharmacy	70	30	100	-	-	-
2.6	Pharmacotherapeutics-I	70	30	100	70	30	100
				600			300 = 900

Third Year examination :

S.No.	Name of Subject	Maximum marks for Theory			Maximum marks for Practicals		
		Examination	Sessional	Total	Examination	Sessional	Total
3.1	Pharmacology-II	70	30	100	70	30	100
3.2	Pharmaceutical Analysis	70	30	100	70	30	100
3.3	Pharmacotherapeutics-II	70	30	100	70	30	100
3.4	Pharmaceutical Jurisprudence	70	30	100	-	-	-
3.5	Medicinal Chemistry	70	30	100	70	30	100
3.6	Pharmaceutical Formulations	70	30	100	70	30	100
				600			500 = 1100

Fourth Year examination :

S.No.	Name of Subject	Maximum marks for Theory			Maximum marks for Practicals		
		Examination	Sessional	Total	Examination	Sessional	Total
4.1	Pharmacotherapeutics-III	70	30	100	70	30	100
4.2	Hospital Pharmacy	70	30	100	70	30	100
4.3	Clinical Pharmacy	70	30	100	70	30	100
4.4	Biostatistics & Research Methodology	70	30	100	-	-	-
4.5	Biopharmaceutics & Pharmacokinetics	70	30	100	70	30	100
4.6	Clinical Toxicology	70	30	100	-	-	-
				600			400 = 1000

Fifth Year examination :

S.No.	Name of Subject	Maximum marks for Theory			Maximum marks for Practicals		
		Examination	Sessional	Total	Examination	Sessional	Total
5.1	Clinical Research	70	30	100	-	-	-
5.2	Pharmacoepidemiology and Pharmacoeconomics	70	30	100	-	-	-
5.3	Clinical Pharmacokinetics & Pharmacotherapeutic Drug Monitoring	70	30	100	-	-	-
5.4	Clerkship *	-	-	-	70	30	100
5.5	Project work (Six Months)	-	-	-	100**	-	100
				300			200 = 500

***** Attending ward rounds on daily basis.

****** 30 marks – viva-voce (oral)
70 marks – Thesis work

11. Eligibility for appearing Examination.— Only such students who produce certificate from the Head of the Institution in which he or she has undergone the Pharm.D. or as the case may be, the Pharm.D. (Post Baccalaureate) course, in proof of his or her having regularly and satisfactorily undergone the course of study by attending not less than 80% of the classes held both in theory and in practical separately in each subject shall be eligible for appearing at examination.

12. Mode of examinations.— (1) Theory examination shall be of three hours and practical examination shall be of four hours duration.

    (2) A Student who fails in theory or practical examination of a subject shall re-appear both in theory and practical of the same subject.

    (3) Practical examination shall also consist of a viva –voce (Oral) examination.

    (4) Clerkship examination – Oral examination shall be conducted after the completion of clerkship of students. An external and an internal examiner will evaluate the student. Students may be asked to present the allotted medical cases followed by discussion. Students' capabilities in delivering clinical pharmacy services, pharmaceutical care planning and knowledge of therapeutics shall be assessed.

13. Award of sessional marks and maintenance of records.— (1) A regular record of both theory and practical class work and examinations conducted in an institution imparting training for Pharm.D. or as the case may be, Pharm.D. (Post Baccalaureate) course, shall be maintained for each student in the institution and 30 marks for each theory and 30 marks for each practical subject shall be allotted as sessional.

    (2) There shall be at least two periodic sessional examinations during each academic year and the highest aggregate of any two performances shall form the basis of calculating sessional marks.

    (3) The sessional marks in practicals shall be allotted on the following basis:-

        (i) Actual performance in the sessional examination (20 marks);
        (ii) Day to day assessment in the practical class work, promptness, viva-voce record maintenance, etc. (10 marks).

14. Minimum marks for passing examination.— A student shall not be declared to have passed examination unless he or she secures at least 50% marks in each of the subjects separately in the theory examinations, including sessional marks and at least 50% marks in each of the practical examinations including sessional marks. The students securing 60% marks or above in aggregate in all subjects in a single attempt at the Pharm.D. or as the case may be, Pharm. D. (Post Baccalaureate) course examination shall be declared to have passed in first class. Students securing 75% marks or above in any subject or subjects shall be declared to have passed with distinction in the subject or those subjects provided he or she passes in all the subjects in a single attempt.

15. Eligibility for promotion to next year.— All students who have appeared for all the subjects and passed the first year annual examination are eligible for promotion to the second year and, so on. However, failure in more than two subjects shall debar him or her from promotion to the next year classes.

16. Internship.— (1) Internship is a phase of training wherein a student is expected to conduct actual practice of pharmacy and health care and acquires skills under the supervision so that he or she may become capable of functioning independently.

    (2) Every student has to undergo one year internship as per Appendix-C to these regulations.

17. Approval of examinations.— Examinations mentioned in regulations 10 to12 and 14 shall be held by the examining authority hereinafter referred to as the university, which shall be approved by the Pharmacy Council of India under sub-section (2) of section 12 of the Pharmacy Act, 1948. Such approval shall be granted only if the examining authority concerned fulfills the conditions as specified in Appendix–D to these regulations.

18. Certificate of passing examination.— Every student who has passed the examinations for the Pharm.D. (Doctor of Pharmacy) or Pharm.D. (Post Baccalaureate) (Doctor of Pharmacy) as the case may be, shall be granted a certificate by the examining authority.

CHAPTER-III
Practical training

19. Hospital posting.— Every student shall be posted in constituent hospital for a period of not less than fifty hours to be covered in not less than 200 working days in each of second, third & fourth year course. Each student shall submit report duly certified by the preceptor and duly attested by the Head of the Department or Institution as prescribed. In the fifth year, every student shall spend half a day in the morning hours attending ward rounds on daily basis as a part of clerkship. Theory teaching may be scheduled in the afternoon.

20. Project work.— (1) To allow the student to develop data collection and reporting skills in the area of community, hospital and clinical pharmacy, a project work shall be carried out under the supervision of a teacher. The project topic must be approved by the Head of the Department or Head of the Institution. The same shall be announced to students within one month of commencement of the fifth year classes. Project work shall be presented in a written report and as a seminar at the end of the year. External and the internal examiners shall do the assessment of the project work.

    (2) Project work shall comprise of objectives of the work, methodology, results, discussions and conclusions.

21. Objectives of project work.— The main objectives of the project work is to—

    (i) show the evidence of having made accurate description of published work of others and of having recorded the findings in an impartial manner; and

    (ii) develop the students in data collection, analysis and reporting and interpretation skills.

22. Methodology.— To complete the project work following methodology shall be adopted, namely:—

    (i) students shall work in groups of not less than *two* and not more than *four* under an authorised teacher;

    (ii) project topic shall be approved by the Head of the Department or Head of the Institution;

    (iii) project work chosen shall be related to the pharmacy practice in community, hospital and clinical setup. It shall be patient and treatment (Medicine) oriented, like drug utilisation reviews, pharmacoepidemiology, pharmacovigilance or pharmacoeconomics;

    (iv) project work shall be approved by the institutional ethics committee;

    (v) student shall present at least three seminars, one in the beginning, one at middle and one at the end of the project work; and

    (vi) two-page write-up of the project indicating title, objectives, methodology anticipated benefits and references shall be submitted to the Head of the Department or Head of the Institution.

23. Reporting .— (1) Student working on the project shall submit jointly to the Head of the Department or Head of the Institution a project report of about 40-50 pages. Project report should include a certificate issued by the authorised teacher, Head of the Department as well as by the Head of the Institution

(2) Project report shall be computer typed in double space using Times Roman font on A4 paper. The title shall be in bold with font size 18, sub-tiles in bold with font size 14 and the text with font size 12. The cover page of the project report shall contain details about the name of the student and the name of the authorised teacher with font size 14.

(3) Submission of the project report shall be done at least one month prior to the commencement of annual or supplementary examination.

24. Evaluation.— The following methodology shall be adopted for evaluating the project work—

(i) Project work shall be evaluated by internal and external examiners.

(ii) Students shall be evaluated in groups for four hours (i.e., about half an hour for a group of four students).

(iii) Three seminars presented by students shall be evaluated for twenty marks each and the average of best two shall be forwarded to the university with marks of other subjects.

(iv) Evaluation shall be done on the following items:

	Marks
a) Write up of the seminar	(7.5)
b) Presentation of work	(7.5)
c) Communication skills	(7.5)
d) Question and answer skills	(7.5)
Total	(30 marks)

(v) Final evaluation of project work shall be done on the following items:

	Marks
a) Write up of the seminar	(17.5)
b) Presentation of work	(17.5)
c) Communication skills	(17.5)
d) Question and answer skills	(17.5)
Total	(70 marks)

Explanation.— For the purposes of differentiation in the evaluation in case of topic being the same for the group of students, the same shall be done based on item numbers b, c and d mentioned above.

APPENDIX-A

(See regulation 8)

PHARM.D. SYLLABUS

First Year

1.1 HUMAN ANATOMY & PHYSIOLOGY (THEORY)

Theory : 3 Hrs. /Week

1. **Scope and Objectives:** This course is designed to impart a fundamental knowledge on the structure and functions of the human body. It also helps in understanding both homeostasis mechanisms and homeostatic imbalances of various body systems. Since a medicament, which is produced by pharmacist, is used to correct the deviations in human body, it enhances the understanding of how the drugs act on the various body systems in correcting the disease state of the organs.

2. **Upon completion of the course the student shall be able to:**
   a. describe the structure (gross and histology) and functions of various organs of the human body;
   b. describe the various homeostatic mechanisms and their imbalances of various systems;
   c. identify the various tissues and organs of the different systems of the human body;
   d. perform the hematological tests and also record blood pressure, heart rate, pulse and Respiratory volumes;
   e. appreciate coordinated working pattern of different organs of each system; and
   f. appreciate the interlinked mechanisms in the maintenance of normal functioning (homeostasis) of human body

3. **Course materials:**

   Text books

   a. Tortora Gerard J. and Nicholas, P. Principles of anatomy and physiology Publisher Harpercollins college New York.
   b. Wilson, K.J.W. Ross and Wilson's foundations of anatomy and physiology. Publisher: Churchill Livingstone, Edinburg.

   Reference books

   a. Guyton arthur, C. *Physiology of human body*. Publisher: Holtsaunders.
   b. Chatterjee,C.C. *Human physiology*. Volume 1&11. Publisher: medical allied agency, Calcutta.
   c. Peter L. Williams, Roger Warwick, Mary Dyson and Lawrence, H.
   d. *Gray's anatomy.* Publisher:Churchill Livingstone, London.

4. Lecture wise program :

Topics

1 Scope of anatomy and physiology, basic terminologies used in this subject (Description of the body as such planes and terminologies)

2 Structure of cell – its components and their functions.

3 Elementary tissues of the human body: epithelial, connective, Muscular and nervous tissues-their sub-types and characteristics

4 a) Osseous system - structure, composition and functions of the Skeleton. (done in practical classes - 6hrs)
b) Classification of joints, Types of movements of joints and disorders of joints (Definitions only)

5 Haemopoetic System
a) Composition and functions of blood
b) Haemopoesis and disorders of blood components (definition of disorder)
c) Blood groups
d) Clotting factors and mechanism
e) Platelets and disorders of coagulation

6 Lymph
a) Lymph and lymphatic system, composition, formation and circulation.
b) Spleen: structure and functions, Disorders
c) Disorders of lymphatic system (definition only)

7 Cardiovascular system
a) Anatomy and functions of heart
b) Blood vessels and circulation (Pulmonary, coronary and systemic circulation)
c) Electrocardiogram (ECG)
d) Cardiac cycle and heart sounds
e) Blood pressure – its maintenance and regulation
f) Definition of the following disorders
Hypertension, Hypotension, Arteriosclerosis, Atherosclerosis, Angina, Myocardial infarction, Congestive heart failure, Cardiac arrhythmias

8 Respiratory system
a) Anatomy of respiratory organs and functions
b) Mechanism / physiology of respiration and regulation of respiration
c) Transport of respiratory gases
d) Respiratory volumes and capacities, and Definition of: Hypoxia, Asphyxia, Dybarism, Oxygen therapy and resuscitation.

9 Digestive system
a) Anatomy and physiology of GIT
b) Anatomy and functions of accessory glands of GIT
c) Digestion and absorption
d) Disorders of GIT (definitions only)

10 Nervous system
a) Definition and classification of nervous system
b) Anatomy, physiology and functional areas of cerebrum
c) Anatomy and physiology of cerebellum
d) Anatomy and physiology of mid brain
e) Thalamus, hypothalamus and Basal Ganglia
f) Spinal card: Structure & reflexes – mono-poly-planter
g) Cranial nerves – names and functions
h) ANS – Anatomy & functions of sympathetic & parasympathetic N.S.

11 Urinary system
a) Anatomy and physiology of urinary system
b) Formation of urine
c) Renin Angiotensin system – Juxtaglomerular apparatus - acid base Balance
d) Clearance tests and micturition

12 Endocrine system
a) Pituitary gland
b) Adrenal gland
c) Thyroid and Parathyroid glands
d) Pancreas and gonads

13 Reproductive system
a) Male and female reproductive system
b) Their hormones – Physiology of menstruation
c) Spermatogenesis & Oogenesis
d) Sex determination (genetic basis)
e) Pregnancy and maintenance and parturition
f) Contraceptive devices

14 Sense organs
a) Eye
b) Ear
c) Skin
d) Tongue & Nose

15 Skeletal muscles
a) Histology
b) Physiology of Muscle contraction
c) Physiological properties of skeletal muscle and their disorders (definitions)

16 Sports physiology
a) Muscles in exercise, Effect of athletic training on muscles and muscle performance,
b) Respiration in exercise, CVS in exercise, Body heat in exercise, Body fluids and salts in exercise,
c) Drugs and athletics

1.1 HUMAN ANATOMY & PHYSIOLOGY (PRACTICAL)

Practical : 3 Hrs./Week

General Requirements: Dissection box, Laboratory Napkin, muslin cloth, record, Observation book(100pages), Stationary items, Blood lancet.

Course materials:

Text books

Goyal, R. K, Natvar M.P, and Shah S.A, Practical anatomy, physiology and biochemistry, latest edition, Publisher: B.S Shah Prakashan, Ahmedabad.

Reference books

Ranade VG, Text book of practical physiology, Latest edition, Publisher: PVG, Pune
Anderson Experimental Physiology, Latest edition, Publisher: NA

List of Experiments:

1. Study of tissues of human body
   (a) Epithelial tissue.
   (b) Muscular tissue.
2. Study of tissues of human body
   (a) Connective tissue.
   (b) Nervous tissue.
3. Study of appliances used in hematological experiments.
4. Determination of W.B.C. count of blood.
5. Determination of R.B.C. count of blood.
6. Determination of differential count of blood.
7. Determination of
   (a) Erythrocyte Sedimentation Rate.
   (b) Hemoglobin content of Blood.
   (c) Bleeding time & Clotting time.
8. Determination of
   (a) Blood Pressure.
   (b) Blood group.
9. Study of various systems with the help of charts, models & specimens
   (a) Skeleton system part I-axial skeleton.
   (b) Skeleton system part II- appendicular skeleton.
   (c) Cardiovascular system.
   (d) Respiratory system.

(e) Digestive system.
(f) Urinary system.
(g) Nervous system.
(h) Special senses.
(i) Reproductive system.

10. Study of different family planning appliances.
11. To perform pregnancy diagnosis test.
12. Study of appliances used in experimental physiology.
13. To record simple muscle curve using gastroenemius sciatic nerve preparation.
14. To record simple summation curve using gastroenemius sciatic nerve preparation.
15. To record simple effect of temperature using gastroenemius sciatic nerve preparation.
16. To record simple effect of load & after load using gastroenemius sciatic nerve preparation.
17. To record simple fatigue curve using gastroenemius sciatic nerve preparation.

Scheme of Practical Examination:

	Sessionals	**Annual**
Identification	04	10
Synopsis	04	10
Major Experiment	07	20
Minor Experiment	03	15
Viva	02	15
Max Marks	**20**	**70**
Duration	**03hrs**	**04hrs**

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance).

1.2 PHARMACEUTICS (THEORY)

Theory : 2 Hrs. /Week

1. **Scope and objectives:** This course is designed to impart a fundamental knowledge on the art and science of formulating different dosage forms. It prepares the students for most basics of the applied field of pharmacy.

2. **Upon the completion of the course the student should be able to:**
   a. know the formulation aspects of different dosage forms;
   b. do different pharmaceutical caluculation involved in formulation;
   c. formulate different types of dosage forms; and
   d. appreciate the importance of good formulation for effectiveness.

3. **Course materials:**

   Text books
   a. Cooper and Gunns Dispensing for pharmacy students.
   b. A text book Professional Pharmacy by N.K.Jain and S.N.Sharma.

   Reference books
   a. Introduction to Pharmaceutical dosage forms by Howard C. Ansel.
   b. Remington's Pharmaceutical Sciences.
   c. Register of General Pharmacy by Cooper and Gunn.
   d. General Pharmacy by M.L.Schroff.

4. **Lecture wise programme:**

   Topics

   1 a. Introduction to dosage forms - classification and definitions
     b. Prescription: definition, parts and handling
     c. Posology: Definition, Factors affecting dose selection. Calculation of children and infant doses.
   2 Historical back ground and development of profession of pharmacy and pharmaceutical industry in brief.
   3 Development of Indian Pharmacopoeia and introduction to other Pharmacopoeias such as BP, USP, European Pharmacopoeia, Extra pharmacopoeia and Indian national formulary.
   4 Weights and measures, Calculations involving percentage solutions, allegation, proof spirit, isotonic solutions etc.
   5 Powders and Granules: Classification advantages and disadvantages, Preparation of simple, compound powders, Insufflations, Dusting powders, Eutectic and Explosive powders, Tooth powder and effervescent powders and granules.
   6 Monophasic Dosage forms: Theoretical aspects of formulation including adjuvant like stabilizers, colorants, flavours with examples. Study of Monophasic liquids like gargles, mouth washes, Throat paint, Ear drops, Nasal drops, Liniments and lotions, Enemas and collodions.

7 Biphasic dosage forms: Suspensions and emulsions, Definition, advantages and disadvantages, classification, test for the type of emulsion, formulation, stability and evaluation.
8 Suppositories and pessaries: Definition, advantages and disadvantages, types of base, method of preparation, Displacement value and evaluation.
9 Galenicals: Definition, equipment for different extraction processes like infusion, Decoction, Maceration and Percolation, methods of preparation of spirits, tinctures and extracts.
10 Pharmaceutical calculations.
11 Surgical aids: Surgical dressings, absorbable gelatin sponge, sutures, ligatures and medicated bandages.
12 Incompatibilities: Introduction, classification and methods to overcome the incompatibilities.

1.2 PHARMACEUTICS (PRACTICAL)

Practical : 3 Hrs./Week

List of Experiments:

1. **Syrups**
   a. Simple Syrup I.P
   b. Syrup of Ephedrine Hcl NF
   c. Syrup Vasaka IP
   d. Syrup of ferrous Phosphate IP
   e. Orange Syrup
2. **Elixir**
   a. Piperizine citrate elixir BP
   b. Cascara elixir BPC
   c. Paracetamol elixir BPC
3. **Linctus**
   a. Simple Linctus BPC
   b. Pediatric simple Linctus BPC
4. **Solutions**
   a. Solution of cresol with soap IP
   b. Strong solution of ferric chloride BPC
   c. Aqueous Iodine Solution IP
   d. Strong solution of Iodine IP
   e. Strong solution of ammonium acetate IP

5. **Liniments**
   a. Liniment of turpentine IP*
   b. Liniment of camphor IP
6. **Suspensions***
   a. Calamine lotion
   b. Magnesium Hydroxide mixture BP
7. **Emulsions***
   a. Cod liver oil emulsion
   b. Liquid paraffin emulsion
8. **Powders**♣
   a. Eutectic powder
   b. Explosive powder
   c. Dusting powder
   d. Insufflations
9. **Suppositories**♣
   a. Boric acid suppositories
   b. Chloral suppositories
10. **Incompatibilities**
    a. Mixtures with Physical
    b. Chemical & Therapeutic incompatibilities

***** colourless bottles required for dispensing ♣ Paper envelope (white), butter paper and white paper required for dispensing.

Scheme of Practical Examination:

	Sessionals	**Annual**
Synopsis	05	15
Major Experiment	10	25
Minor Experiment	03	15
Viva	02	15
Max Marks	**20**	**70**
Duration	**03hrs**	**04hrs**

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance).

1.3 MEDICINAL BIOCHEMISTRY (THEORY)

Theory : 3 Hrs. /Week

1. **Scope of the Subject:** Applied biochemistry deals with complete understanding of the molecular level of the chemical process associated with living cells.Clinical chemistry deals with the study of chemical aspects of human life in health and illness and the application of chemical laboratory methods to diagnosis, control of treatment, and prevention of diseases.

2. **Objectives of the Subject** (Know, do, appreciate) :

   The objective of the present course is providing biochemical facts and the principles to the students of pharmacy. Upon completion of the subject student shall be able to –

   a. understand the catalytic activity of enzymes and importance of isoenzymes in diagnosis of diseases;
   b. know the metabolic process of biomolecules in health and illness (metabolic disorders);
   c. understand the genetic organization of mammalian genome; protein synthesis; replication; mutation and repair mechanism;
   d. know the biochemical principles of organ function tests of kidney, liver and endocrine gland; and
   e. do the qualitative analysis and determination of biomolecules in the body fluids.

   Text books (Theory)

   a. Harpers review of biochemistry - Martin
   b. Text book of biochemistry – D.Satyanarayana
   c. Text book of clinical chemistry- Alex kaplan &Laverve L.Szabo

   Reference books (Theory)

   a. Principles of biochemistry -- Lehninger
   b. Text book of biochemistry -- Ramarao
   c. Practical Biochemistry-David T.Plummer.
   d. Practical Biochemistry-Pattabhiraman.

3. **Lecture wise programme:**

   Topics

   1 **Introduction to biochemistry:** Cell and its biochemical organization, transport process across the cell membranes. Energy rich compounds; ATP, Cyclic AMP and their biological significance.

   2 **Enzymes**: Definition; Nomenclature; IUB classification; Factor affecting enzyme activity; Enzyme action; enzyme inhibition. Isoenzymes and their therapeutic and diagnostic applications; Coenzymes and their biochemical role and deficiency diseases.

   3 **Carbohydrate metabolism**: Glycolysis, Citric acid cycle (TCA cycle), HMP shunt, Glycogenolysis, gluconeogenesis, glycogenesis. Metabolic disorders of carbohydrate metabolism (diabetes mellitus and glycogen storage diseases); Glucose, Galactose tolerance test and their significance; hormonal regulation of carbohydrate metabolism.

4 **Lipid metabolism:** Oxidation of saturated (β-oxidation); Ketogenesis and ketolysis; biosynthesis of fatty acids, lipids; metabolism of cholesterol; Hormonal regulation of lipid metabolism. Defective metabolism of lipids (Atheroslerosis, fatty liver, hypercholesterolmiea).

5 **Biological oxidation:** Coenzyme system involved in Biological oxidation. Electron transport chain (its mechanism in energy capture; regulation and inhibition); Uncouplers of ETC; Oxidative phosphorylation;

6 **Protein and amino acid metabolism:** protein turn over; nitrogen balance; Catabolism of Amino acids (Transamination, deamination & decarboxylation). Urea cycle and its metabolic disorders; production of bile pigments; hyperbilirubinemia, porphoria, jaundice. Metabolic disorder of Amino acids.

7 **Nucleic acid metabolism:** Metabolism of purine and pyrimidine nucleotides; Protein synthesis; Genetic code; inhibition of protein synthesis; mutation and repair mechanism; DNA replication (semiconservative /onion peel models) and DNA repair mechanism.

8 **Introduction to clinical chemistry: Cell**; composition; malfunction; Roll of the clinical chemistry laboratory.

9 **The kidney function tests:** Role of kidney; Laboratory tests for normal function includes-

a) Urine analysis (macroscopic and physical examination, quantitative and semiquantitative tests.)
b) Test for NPN constituents. (Creatinine /urea clearance, determination of blood and urine creatinine, urea and uric acid)
c) Urine concentration test
d) Urinary tract calculi. (stones)

10 **Liver function tests:** Physiological role of liver, metabolic, storage, excretory, protective, circulatory functions and function in blood coagulation.

a) Test for hepatic dysfunction-Bile pigments metabolism.
b) Test for hepatic function test- Serum bilirubin, urine bilirubin, and urine urobilinogen.
c) Dye tests of excretory function.
d) Tests based upon abnormalities of serum proteins.

Selected enzyme tests.

11 **Lipid profile tests:** Lipoproteins, composition, functions. Determination of serum lipids, total cholesterol, HDL cholesterol, LDL cholesterol and triglycerides.

12 **Immunochemical techniques** for determination of hormone levels and protein levels in serum for endocrine diseases and infectious diseases.

Radio immuno assay (RIA) and Enzyme Linked Immuno Sorbent Assay (ELISA)

13 **Electrolytes:** Body water, compartments, water balance, and electrolyte distrubution. Determination of sodium, calcium potassium, chlorides, bicarbonates in the body fluids.

1.3 MEDICINAL BIOCHEMISTRY (PRACTICAL)

Practical : 3 Hrs./Week

Title of the Experiment:

1 Qualitative analysis of normal constituents of urine.*
2 Qualitative analysis of abnormal constituents of urine.*
3 Quantitative estimation of urine sugar by Benedict's reagent method.**
4 Quantitative estimation of urine chlorides by Volhard's method.**
5 Quantitative estimation of urine creatinine by Jaffe's method.**
6 Quantitative estimation of urine calcium by precipitation method.**
7 Quantitative estimation of serum cholesterol by Libermann Burchard's method.**
8 Preparation of Folin Wu filtrate from blood.*
9 Quantitative estimation of blood creatinine.**
10 Quantitative estimation of blood sugar Folin-Wu tube method.**
11 Estimation of SGOT in serum.**
12 Estimation of SGPT in serum.**
13 Estimation of Urea in Serum.**
14 Estimation of Proteins in Serum.**
15 Determination of serum bilirubin**
16 Determination of Glucose by means of Glucoseoxidase.**
17 Enzymatic hydrolysis of Glycogen/Starch by Amylases.**
18 Study of factors affecting Enzyme activity. (pH & Temp.)**
19 Preparation of standard buffer solutions and its pH measurements (any two)*
20 Experiment on lipid profile tests**
21 Determination of sodium,calcium and potassium in serum.**

** indicate major experiments & * indicate minor experiments

Assignments:

Format of the assignment

1. Minimum & Maximum number of pages.
2. It shall be computer draft copy.
3. Reference(s) shall be included at the end.
4. Name and signature of the student.
5. Assignment can be a combined presentation at the end of the academic year.
6. Time allocated for presentation may be 8+2 Min.

Scheme of Practical Examination:

	Sessionals	**Annual**
Synopsis	05	15
Major Experiment	10	25
Minor Experiment	03	15
Viva	02	15
Max Marks	**20**	**70**
Duration	**03hrs**	**04hrs**

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance).

1.4 PHARMACEUTICAL ORGANIC CHEMISTRY (THEORY)

Theory : 3 Hrs. /Week

1. **Scope and objectives**: This course is designed to impart a very good knowledge about
   a. IUPAC/Common system of nomenclature of simple organic compounds belonging to different classes of organic compounds;
   b. Some important physical properties of organic compounds;
   c. Free radical/ nucleophyllic [alkyl/ acyl/ aryl] /electrophyllic substitution, free radical/ nucleophyllic / electrophyllic addition, elimination, oxidation and reduction reactions with mechanism, orientation of the reaction, order of reactivity, stability of compounds;
   d. Some named organic reactions with mechanisms; and
   e. Methods of preparation, test for purity, principle involved in the assay, important medicinal uses of some important organic compounds.

2. **Course materials:**

   Text books
   a. T.R.Morrison and R. Boyd - Organic chemistry,
   b. Bentley and Driver-Text book of Pharmaceutical chemistry
   c. I.L.Finer- Organic chemistry, the fundamentals of chemistry

   Reference books
   a. Organic chemistry – J.M.Cram and D.J.Cram
   b. Organic chemistry- Brown
   c. Advanced organic chemistry- Jerry March, Wiley
   d. Organic chemistry- Cram and Hammered, Pine Hendrickson

3. **Lecture wise programme :**

   Topics

   1 Structures and Physical properties:
      a. Polarity of bonds, polarity of molecules, M.P, Inter molecular forces, B.P, Solubility, non ionic solutes and ionic solutes, protic and aprotic Solvents, ion pairs,
      b. Acids and bases, Lowry bronsted and Lewis theories
      c. Isomerism
   2 Nomenclature of organic compound belonging to the following classes Alkanes, Alkenes, Dienes, Alkynes, Alcohols, Aldehydes, Ketones, Amides, Amines, Phenols, Alkyl Halides, Carboxylic Acid, Esters, Acid Chlorides And Cycloalkanes.
   3 Free radicals chain reactions of alkane : Mechanism, relative reactivity and stability
   4 Alicyclic compounds : Preparations of cyclo alkanes, Bayer strain theory and orbital picture of angle strain.
   5 Nuclophilic aliphatic substitution mechanism: Nucleophiles and leaving groups, kinetics of second and first order reaction, mechanism and kinetics of SN_2 reactions. Stereochemistry and steric hindrance, role of solvents, phase transfer catalysis, mechanism and kinetics of SN1 reactions, stereochemistry, carbocation and their stability, rearrangement of carbocation, role of solvents in SN1 reaction, Ion dipole bonds, SN2 versus SN1 solvolyses, nucleophilic assistance by the solvents.

6 Dehydro halogenation of alkyl halides: 1,2 elimination, kinetics, E2 and E1 mechanism, elimination via carbocation, evidence for E2 mechanism, absence of rearrangement isotope effect, absence hydrogen exchange, the element effect, orientation and reactivity, E2 versus E1, elimination versus substitution, dehydration of alcohol, ease of dehydration, acid catalysis, reversibility, orientation.

7 Electrophillic and free radicals addition: Reactions at carbon-carbon, double bond, electrophile, hydrogenation, heat of hydrogenation and stability of alkenes, markownikoff rule, addition of hydrogen halides, addition of hydrogen bromides, peroxide effect, electrophillic addition, mechanism, rearrangement, absence of hydrogen exchange, orientation and reactivity, addition of halogen, mechanism, halohydin formation, mechanism of free radicals additon, mechanism of peroxide initiated addition of hydrogen bromide, orientation of free addition, additions of carbene to alkene, cyclo addition reactions.

8 Carbon-carbon double bond as substituents: Free radical halogenations of alkenes, comparision of free radical substitution with free radical addition, free radical substitution in alkenes, orientation and reactivity, allylic rearrangements.

9 Theory of resonance: Allyl radical as a resonance hybrid, stability, orbital picture, resonance stabilisation of allyl radicals, hyper conjugation, allyl cation as a resonance hybrid, nucleophyllic substitution in allylic substrate, SN1 reactivity, allylic rearrangement, resonance stabilisation of allyl cation, hyper conjugation, nucleophilic substitution in allylic substrate, SN2 nucleophilic substituion in vinylic substrate, vinylic cation, stability of conjugated dienes, resonance in alkenes, hyper conjugation, ease of formation of conjugated dienes, orientation of elimination, electrophilic addition to conjugated dienes, 1,4- addition, 1,2-versus 1,4-addition, rate versus equilibrium, orientation and reactivity of free radical addition to conjugated dienes.

10 Elecrophilic aromatic substitution: Effect of substituent groups, determination of orientation, determination of relative reactivity, classification of substituent group, mechanism of nitration, sulphonation, halogenation, friedel craft alkylation, friedel craft acylation, reactivity and orientation, activating and deactivating O,P,M directing groups, electron release via resonance, effect of halogen on electrophilic aromatic substitution in alkyl benzene, side chain halogination of alkyl benzene, resonance stabilization of benzyl radical.

11 Nucleophilic addition reaction: Mechanism, ionisation of carboxylic acids, acidity constants, acidity of acids, structure of carboxylate ions, effect of substituent on acidity, nucleophilic acyl substitution reaction, conversion of acid to acid chloride, esters, amide and anhydride. Role of caboxyl group, comparison of alkyl nucleophilic substitution with acyl nucleophilic substitution.

12 Mechanism of aldol condensation, claisen condensation, cannizzaro reaction, crossed aldol condensation, crossed cannizzaro reaction, benzoin condensation, perkin condensation. Knoevenagel, Reformatsky reaction, Wittig reaction, Michael addition.

13 Hoffman rearrangement: Migration to electron deficient nitrogen, Sandmeyer's reaction, basicity of amines, diazotisation and coupling, acidity of phenols, Williamson synthesis, Fries rearrangement, Kolbe reaction, Reimer tieman's reactions.

14 Nucleophilic aromatic substitution: Bimolecular displacement mechanisms, orientation, comparison of aliphatic nucleophilic substitution with that of aromatic.

15 Oxidation reduction reaction.

16 Study of the following official compounds- preparation, test for purity, assay and medicinal uses of Chlorbutol, Dimercaprol, Glyceryl trinitrate, Urea, Ethylene diamine dihyrate, Vanillin, Paraldehyde, Ethylene chloride, Lactic acid, Tartaric acid, citric acid, salicylic acid, aspirin, methyl salicylate, ethyl benzoate, benzyl benzoate, dimethyl pthalate, sodium lauryl sulphate, saccharin sodium, mephensin.

1.4 PHARMACEUTICAL ORGANIC CHEMISTRY (PRACTICAL)

Practical : 3 Hrs./Week

I. Introduction to the various laboratory techniques through demonstration involving synthesis of the following compounds (at least 8 compounds to be synthesised):

1. Acetanilde / aspirin (Acetylation)
2. Benzanilide / Phenyl benzoate (Benzoylation)
3. P-bromo acetanilide / 2,4,6 – tribromo aniline (Bromination)
4. Dibenzylidene acetone (Condensation)
5. 1-Phenylazo-2-napthol (Diazotisation and coupling)
6. Benzoic acid / salicylic acid (Hydrolysis of ester)
7. M-dinitro benzene (Nitration)
8. 9, 10 – Antharaquinone (Oxidation of anthracene) / preparation of benzoic acid from toluene or benzaldehyde
9. M-phenylene diamine (Reduction of M-dinitrobenzene) / Aniline from nitrobenzene
10. Benzophenone oxime
11. Nitration of salicylic acid
12. Preparation of picric acid
13. Preparation of O-chlorobenzoic acid from O-chlorotolune
14. Preparation of cyclohexanone from cyclohexanol

II. Identification of organic compounds belonging to the following classes by :

Systematic qualitative organic analysis including preparation of derivatives Phenols, amides, carbohydrates, amines, carboxylic acids, aldehyde and ketones, Alcohols, esters, hydrocarbons, anilides, nitrocompounds.

III. Introduction to the use of stereo models:

Methane, Ethane, Ethylene, Acetylene, Cis alkene, Trans alkene, inversion of configuration.

Scheme of Practical Examination:

	Sessionals	**Annual**
Synopsis	05	15
Major Experiment	10	25
Minor Experiment	03	15
Viva	02	15
Max Marks	**20**	**70**
Duration	**03hrs**	**04hrs**

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance).

1.5 PHARMACEUTICAL INORGANIC CHEMISTRY (THEORY)

Theory : 2 Hrs. /Week

1. **Scope and objectives:** This course mainly deals with fundamentals of Analytical chemistry and also the study of inorganic pharmaceuticals regarding their monographs and also the course deals with basic knowledge of analysis of various pharmaceuticals.

2. **Upon completion of the course student shall be able to:**
   a. under stand the principles and procedures of analysis of drugs and also regarding the application of inorganic pharmaceuticals;
   b. know the analysis of the inorganic pharmaceuticals their applications; and
   c. appreciate the importance of inorganic pharmaceuticals in preventing and curing the disease.

3. **Course materials:**

   Text books
   a. A text book Inorganic medicinal chemistry by Surendra N. Pandeya
   b. A. H. Beckett and J. B. Stanlake's Practical Pharmaceutical chemistry Vol-I & Vol-II
   c. Inorganic Pharmaceutical Chemistry III-Edition P.Gundu Rao

   Reference books
   a. Inorganic Pharmaceutical Chemistry by Anand & Chetwal
   b. Pharmaceutical Inorganic chemistry by Dr.B.G.Nagavi
   c. Analytical chemistry principles by John H. Kennedy
   d. I.P.1985 and 1996, Govt. of India, Ministry of health

4. **Lecture wise programme:**

   Topics
   1 Errors
   2 Volumetric analysis
   3 Acid-base titrations
   4 Redox titrations
   5 Non aqueous titrations
   6 Precipitation titrations
   7 Complexometric titrations
   8 Theory of indicators
   9 Gravimetry
   10 Limit tests
   11 Medicinal gases
   12 Acidifiers
   13 Antacids
   14 Cathartics
   15 Electrolyte replenishers

16 Essential Trace elements
17 Antimicrobials
18 Pharmaceutical aids
19 Dental Products
20 Miscellaneous compounds
21 Radio Pharmaceuticals

1.5 PHARMACEUTICAL INORGANIC CHEMISTRY (PRACTICAL)

Practical : 3 Hrs./Week

1. **Limit test (6 exercises)**
   a. Limit test for chlorides
   b. Limit test for sulphates
   c. Limit test for iron
   d. Limit test for heavy metals
   e. Limit test for arsenic
   f. Modified limit tests for chlorides and sulphates

2. **Assays (10 exercises)**
   a. Ammonium chloride- Acid-base titration
   b. Ferrous sulphate- Cerimetry
   c. Copper sulpahte- Iodometry
   d. Calcilugluconate- Complexometry
   e. Hydrogen peroxide – Permanganometry
   f. Sodium benzoate – Nonaqueous titration
   g. Sodium chloride – Modified volhard's method
   h. Assay of KI – KIO_3 titration
   i. Gravimetric estimation of barium as barium sulphate
   j. Sodium antimony gluconate or antimony potassium tartarate

3. **Estimation of mixture (Any two exercises)**
   a. Sodium hydroxide and sodium carbonate
   b. Boric acid and Borax
   c. Oxalic acid and sodium oxalate

4. **Test for identity (Any three exercises)**
   a. Sodium bicorbonate
   b. Barium sulphate
   c. Ferrous sulphate
   d. Potassium chloride

5. **Test for purity (Any two exercises)**
   a. Swelling power in Bentonite
   b. Acid neutralising capacity in aluminium hydroxide gel
   c. Ammonium salts in potash alum
   d. Adsorption power heavy Kaolin
   e. Presence of Iodates in KI

6. **Preparations (Any two exercises)**
   a. Boric acids
   b. Potash alum
   c. Calcium lactate
   d. Magnesium suphate

Scheme of Practical Examination :

	Sessionals	**Annual**
Synopsis	05	15
Major Experiment	10	25
Minor Experiment1&2	03	15
Viva	02	15
Max Marks	**20**	**70**
Duration	**03hrs**	**04hrs**

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance).

1.6 REMEDIAL MATHEMATICS/BIOLOGY (THEORY)

Theory : 3 Hrs. /Week

REMEDIAL MATHEMATICS :

1. **Scope and objectives**: This is an introductory course in mathematics. This subjects deals with the introduction to matrices, determinants, trigonometry, analytical geometry, differential calculus, integral calculus, differential equations, laplace transform.

2. **Upon completion of the course the student shall be able to : –**
   a. Know Trignometry, Analytical geometry, Matrices, Determinant, Integration, Differential equation, Laplace transform and their applications;
   b. solve the problems of different types by applying theory; and
   c. appreciate the important applications of mathematics in pharmacy.

3. **Course materials:**

   Text books
   a. Differential calculus By Shantinarayan
   b. Text book of Mathematics for second year pre-university by Prof.B.M.Sreenivas

   Reference books
   a. Integral calculus By Shanthinarayan
   b. Engineering mathematics By B.S.Grewal
   c. Trigonometry Part-I By S.L.Loney

4. **Lecture wise programme :**

   Topics

   1 **Algebra :** Determinants, Matrices
   2 **Trigonometry :** Sides and angles of a triangle, solution of triangles
   3 **Analytical Geometry :**Points, Straight line, circle, parabola
   4 **Differential calculus:** Limit of a function, Differential calculus, Differentiation of a sum, Product, Quotient Composite, Parametric, exponential, trigonometric and Logarithmic function. Successive differentiation, Leibnitz's theorem, Partial differentiation, Euler's theorem on homogeneous functions of two variables
   5 **Integral Calculus:** Definite integrals, integration by substitution and by parts, Properties of definite integrals.
   6 **Differential equations:** Definition, order, degree, variable separable, homogeneous, Linear, heterogeneous, linear, differential equation with constant coefficient, simultaneous linear equation of second order.
   7 **Laplace transform:** Definition, Laplace transform of elementary functions, Properties of linearity and shifting.

BIOLOGY :

1. **Scope and objectives**: This is an introductory course in Biology, which gives detailed study of natural sources such as plant and animal origin. This subject has been introduces to the pharmacy course in order to make the student aware of various naturally occurring drugs and its history, sources, classification, distribution and the characters of the plants and animals. This subject gives basic foundation to Pharmacognosy.

2. **Course materials:**

Text books

a. Text book of Biology by S.B.Gokhale
b. A Text book of Biology by Dr.Thulajappa and Dr. Seetaram.

Reference books

a. A Text book of Biology by B.V.Sreenivasa Naidu
b. A Text book of Biology by Naidu and Murthy
c. Botany for Degree students By A.C.Dutta.
d. Outlines of Zoology by M.Ekambaranatha ayyer and T.N.Ananthakrishnan.
e. A manual for pharmaceutical biology practical by S.B.Gokhale and C.K.Kokate.

3. **Lecture wise programme :**

Topic

PART – A

01 Introduction
02 General organization of plants and its inclusions
03 Plant tissues
04 Plant kingdom and its classification
05 Morphology of plants
06 Root, Stem, Leaf and Its modifications
07 Inflorescence and Pollination of flowers
08 Morphology of fruits and seeds
09 Plant physiology
10 Taxonomy of Leguminosae, umbelliferae, Solanaceae, Lilliaceae, Zinziberaceae, Rubiaceae
11 Study of Fungi, Yeast, Penicillin and Bacteria

PART-B

01 Study of Animal cell
02 Study animal tissues
03 Detailed study of frog
04 Study of Pisces, Raptiles, Aves
05 Genearal organization of mammals
06 Study of poisonous animals

1.6 BIOLOGY (PRACTICAL)

Practical : 3 Hrs./Week

Title:

1. Introduction of biology experiments
2. Study of cell wall constituents and cell inclusions
3. Study of Stem modifications
4. Study of Root modifications
5. Study of Leaf modifications
6. Identification of Fruits and seeds
7. Preparation of Permanent slides
8. T.S. of Senna, Cassia, Ephedra, Podophyllum.
9. Simple plant physiological experiments
10. Identification of animals
11. Detailed study of Frog
12. Computer based tutorials

Scheme of Practical Examination :

	Sessionals	**Annual**
Identification	04	10
Synopsis	04	10
Major Experiment	07	20
Minor Experiment	03	15
Viva	02	15
Max Marks	**20**	**70**
Duration	**03hrs**	**04hrs**

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance.

Second year

2.1 PATHOPHYSIOLOGY (THEORY)

Theory : 3 Hrs. /Week

1. **Scope of the Subject:** This course is designed to impart a thorough knowledge of the relevant aspects of pathology of various conditions with reference to its pharmacological applications, and understanding of basic Pathophysiological mechanisms. Hence it will not only help to study the syllabus of pathology, but also to get baseline knowledge of its application in other subject of pharmacy.

2. **Objectives of the Subject :** Upon completion of the subject student shall be able to –
   a. describe the etiology and pathogenesis of the selected disease states;
   b. name the signs and symptoms of the diseases; and
   c. mention the complications of the diseases.

   Text books (Theory)
   a. Pathologic basis of disease by- Cotran, Kumar, Robbins
   b. Text book of Pathology- Harsh Mohan
   c. Text book of Pathology- Y.M. Bhinde

   Reference books (Theory)
   a. Clinical Pharmacy and Therapeutics; Second edition; Roger Walker; Churchill Livingstone publication

3. **Detailed syllabus and lecture wise schedule :**

   Chapter

   1 **Basic principles of cell injury and Adaptation**
   a) Causes, Pathogenesis and morphology of cell injury
   b) Abnormalities in lipoproteinaemia, glycogen infiltration and glycogen infiltration and glycogen infiltration and glycogen storage diseases

   2 **Inflammation**
   a) Pathogenesis of acute inflammation, Chemical mediators in inflammation, Types of chronic inflammation
   b) Repairs of wounds in the skin, factors influencing healing of wounds

   3 **Diseases of Immunity**
   a) Introduction to Tand B cells
   b) MHC proteins or transplantation antigens
   c) Immune tolerance
   - Hypersensitivity
     Hypersensitivity type I, II, III, IV, Biological significance, Allergy due to food, chemicals and drugs
   - Autoimmunity
     Criteria for autoimmunity, Classifications of autoimmune diseases in man, mechanism of autoimmunity, Transplantation and immunologic tolerance, allograft rejections, transplantation antigens, mechanism of rejection of allograft.
   - Acquired immune deficiency syndrome (AIDS)

- Amylodosis

4 **Cancer:** differences between benign and malignant tumors, Histological diagnosis of malignancy, invasions and metastasis, patterns of spread, disturbances of growth of cells, classification of tumors, general biology of tumors, spread of malignant tumors, etiology and pathogenesis of cancer.

5 Types of shock, mechanisms, stages and management

6 Biological effects of radiation

7 Environmental and nutritional diseases
   i) Air pollution and smoking- SO2,NO, NO2, and CO
   ii) Protein calorie malnutrition, vitamins, obesity, pathogenesis of starvation.

8 Pathophysiology of common diseases
   a. Parkinsonism
   b. Schizophrenia
   c. Depression and mania
   d. Hypertension,
   e. Stroke (ischaemic and hemorrhage)
   f. Angina, CCF, Atherosclerosis, Myocardial infarction
   g. Diabetes Mellitus
   h. Peptic ulcer and inflammatory bowel diseases
   i. Cirrhosis and Alcoholic liver diseases
   j. Acute and chronic renal failure
   k. Asthma and chronic obstructive airway diseases

9 Infectious diseases :
   Sexually transmitted diseases (HIV,Syphilis,Gonorrhea), Urinary tract infections, Pneumonia, Typhoid, Tuberculosis, Leprosy, Malaria Dysentery (bacterial and amoebic), Hepatitis- infective hepatitis.

4. Assignments :

Title of the Experiment

1 Chemical Mediators of inflammation
2 Drug Hypersensitivity
3 Cigarette smoking & its ill effects
4 Biological Effects of Radiation
5 Etiology and hazards of obesity
6 Complications of diabetes
7 Diagnosis of cancer
8 Disorders of vitamins
9 Methods in Pathology-Laboratory values of clinical significance
10 Pathophysiology of Dengue Hemorrhagic Fever (DHF)

Format of the assignment

1 Minimum & Maximum number of pages.
2. Reference(s) shall be included at the end.
3. Assignment can be a combined presentation at the end of the academic year
4. It shall be computer draft copy.
5. Name and signature of the student
6. Time allocated for presentation may be 8+2 Min.

2.2 PHARMACEUTICAL MICROBIOLOGY (THEORY)

Theory : 3 Hrs. /Week

1. **Scope of the Subject:** Microbiology has always been an essential component of pharmacy curriculum. This is because of the relevance of microbiology to pharmaceutical sciences and more specifically to pharmaceutical industry. Pharmaceutical biotechnology is the logical extension of pharmaceutical microbiology, which is expected to change the complete drug product scenario in the future.
   This course deals with the various aspects of microorganisms, its classification, morphology, laboratory cultivation identification and maintenance. Its also discusses with sterilization of pharmaceutical products, equipment, media etc. The course further discusses the immunological preparations, diseases its transmission, diagnosis, control and immunological tests.

2. **Objectives of the Subject :**
   Upon completion of the subject student shall be able to –
   a. know the anatomy, identification, growth factors and sterilization of microorganisms;
   b. know the mode of transmission of disease causing microorganism, symptoms of disease, and treatment aspect;
   c. do estimation of RNA and DNA and there by identifying the source;
   d. do cultivation and identification of the microorganisms in the laboratory;
   e. do identification of diseases by performing the diagnostic tests; and
   f. appreciate the behavior of motility and behavioral characteristics of microorganisms.

Text books (Theory)

a. Vanitha Kale and Kishor Bhusari " Applied Microbiology " Himalaya Publishing house Mumbai.
b. Mary Louis Turgeon " Immunology and Serology in Laboratory Medicines" 2nd edition, 1996 Mosby- Year book inc St. Louis Missouri 63146.
c. Harsh Mohan, " Text book of Pathology" 3rd edition, 1998, B-3 Ansari road Darya ganj N. Delhi.

Reference books (Theory)

a. Prescot L.M., Jarley G.P Klein D.A "Microbiology" 2nd- edition Mc Graw Hill Company Inc
b. Rawlins E.A."Bentley's Text Book of Pharmaceutics" B ailliere Tindals 24-28 London 1988
c. Forbisher " Fundamentals of Microbiology" Philidelphia W.B. Saunders.
d. Prescott L.M. Jarley G.P., Klein.D.A. " Microbiology."2nd edition WMC Brown Publishers, Oxford. 1993
e. War Roitt, Jonathan Brostoff, David male, " Immunology"3rd edition 1996, Mosby-year book Europe Ltd, London.
f. Pharmacopoeia of India, Govt of India, 1996.

3. Detailed syllabus and lecture wise schedule :

Title of the topic

1 Introduction to the science of microbiology. Major divisions of microbial world and Relationship among them.

2 Different methods of classification of microbes and study of Bacteria, Fungi, virus, Rickettsiae, Spirochetes.

3 Nutritional requirements, growth and cultivation of bacteria and virus. Study of different important media required for the growth of aerobic and anaerobic bacteria & fungi. Differential media, enriched media and selective media, maintenance of lab cultures.

4 Different methods used in isolation and identification of bacteria with emphasis to different staining techniques and biochemical reactions. Counting of bacteria -Total and Viable counting techniques.

5 Detailed study of different methods of sterilization including their merits and demerits. Sterilization methods for all pharmaceutical products. Detailed study of sterility testing of different pharmaceutical preparations . Brief information on Validation.

6 Disinfectants- Study of disinfectants, antiseptics, fungicidal and virucidal agents factors affecting their activation and mechanism of action. Evaluation of bactericidal, bacteristatic, , virucidal activities, evaluation of preservatives in pharmaceutical preparations.

7 Immunology- Immunity, Definition, Classification, General principles of natural immunity, Phagocytosis, acquired immunity(active and passive) . Antigens, chemical nature of antigens structure and formation of Antibodies, Antigen-Antibody reactions. Bacterial exotoxins and endotoxins. Significance of toxoids in active immunity, Immunization programme, and importance of booster dose.

8 Diagnostic tests : Schick's Test, Elisa test, Western Blot test, Southern Blot PCR Widal, QBC, Mantaux Peripheral smear. Study of malarial parasite.

9 Microbial culture sensitivity Testing: Interpretation of results Principles and methods of different microbiological assays, microbiological assay of Penicillin, Streptomycin and vitamin B_2 and B_{12}. Standardisation of vaccines and sera.

10 Study of infectious diseases: Typhoid, Tuberculosis, Malaria, Cholera, Hepatitis, Meningitis, Syphilis & Gonorrhea and HIV.

2.2 PHARMACEUTICAL MICROBIOLOGY (PRACTICAL)

Practical : 3 Hrs./Week

Title of the Experiment:

1 Study of apparatus used in experimental microbiology*.

2 Sterilisation of glass ware's. Preparation of media and sterilisation.*

3 Staining techniques – Simple staining ; Gram's staining ; Negative staining**

4 Study of motility characters*.

5 Enumeration of micro-organisms (Total and Viable)*

6 Study of the methods of isolation of pure culture.*

7 Bio chemical testing for the identification of micro*-organisms.

8 Cultural sensitivity testing for some micro-organisms.*
9 Sterility testing for powders and liquids.*
10 Determination of minimum inhibitory concentration.*
11 Microbiological assay of antibiotics by cup plate method.*
12 Microbiological assay of vitamins by Turbidometric method**
13 Determination of RWC.**
14 Diagnostic tests for some common diseases, Widal, malarial parasite.**

* Indicate minor experiment & ** indicate major experiment

Assignments:

1 Visit to some pathological laboratories & study the activities and equipment/instruments used and reporting the same.
2. Visit to milk dairies (Pasturization) and microbial laboratories(other sterization methods) & study the activities and equipment/instruments used and reporting the same.
3. Library assignments
   a. Report of recent microbial techniques developed in diagnosing some common diseases.
   b. Latest advancement developed in identifying, cultivating & handling of microorganisms.

Format of the assignment:

1. Minimum & Maximum number of pages.
2. It shall be computer draft copy.
3. Reference(s) shall be included at the end.
4. Name and signature of the student.
5. Assignment can be a combined presentation at the end of the academic year.
6. Time allocated for presentation may be 8+2 Min.

Scheme of Practical Examination:

	Sessionals	**Annual**
Synopsis	05	15
Major Experiment	10	25
Minor Experiment	03	15
Viva	02	15
Max Marks	**20**	**70**
Duration	**03hrs**	**04hrs**

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance).

2.3 PHARMACOGNOSY & PHYTOPHARMACEUTICALS (THEORY)

Theory : 3 Hrs. /Week

1. **Scope and objectives:** This subject has been introduced for the pharmacy course in order to make the student aware of medicinal uses of various naturally occurring drugs its history, sources, distribution, method of cultivation, active constituents, medicinal uses, identification tests, preservation methods, substitutes and adulterants.

2. **Upon completion of the course student shall be able to:**
   a. under stand the basic principles of cultivation, collection and storage of crude drugs;
   b. know the source, active constituents and uses of crude drugs; and
   c. appreciate the applications of primary and secondary metabolites of the plant.

3. **Course materials:**

   Text books
   a. Pharmacognosy by G.E. Trease & W.C.Evans.
   b. Pharmacognosy by C.K.Kokate,Gokhale & A.C.Purohit.

   Reference books
   a. Pharmacognosy by Brady &Tyler.E.
   b. Pharmacognosy by T.E.Wallis.
   c. Pharmacognosy by C.S. Shah & Qadery.
   d. Pharmacognosy by M.A. Iyengar.

4. **Lecture wise programme:**

   Topics

   1 Introduction.
   2 Definition, history and scope of Pharmacognosy.
   3 Classification of crude drugs.
   4 Cultivation, collection, processing and storage of crude drugs.
   5 Detailed method of cultivation of crude drugs.
   6 Study of cell wall constituents and cell inclusions.
   7 Microscopical and powder Microscopical study of crude drugs.
   8 Study of natural pesticides.
   9 Detailed study of various cell constituents.
   10 Carbohydrates and related products.
   11 Detailed study carbohydrates containing drugs.(11 drugs)
   12 Definition sources, method extraction, chemistry and method of analysis of lipids.
   13 Detailed study of oils.
   14 Definition, classification, chemistry and method of analysis of protein.
   15 Study of plants fibers used in surgical dressings and related products.
   16 Different methods of adulteration of crude drugs.

2.3 PHARMACOGNOSY & PHYTOPHARMACEUTICALS (PRACTICAL)

Practical : 3 Hrs./Week

General Requirements: Laboratory Napkin, Observation Book 150 pages Zero brush, Needle, Blade, Match box.

List of experiments:

1 Introduction of Pharmacognosy laboratory and experiments.
2 Study of cell wall constituents and cell inclusions.
3 Macro, powder and microscopic study of Datura.
4 Macro, powder and microscopic study of Senna.
5 Macro, powder and microscopic study of Cassia.cinnamon.
6 Macro, powder and microscopic study of Cinchona.
7 Macro, powder and microscopic study of Ephedra.
8 Macro, powder and microscopic study of Quassia.
9 Macro, powder and microscopic study of Clove
10 Macro, powder and microscopic study of Fennel.
11 Macro, powder and microscopic study of Coriander.
12 Macro, powder and microscopic study of Isapgol.
13 Macro, powder and microscopic study of Nux vomica.
14 Macro, powder and microscopic study of Rauwolfia.
15 Macro, powder and microscopic study of Liquorice.
16 Macro, powder and microscopic study of Ginger.
17 Macro, powder and microscopic study of Podophyllum.
18 Determination of Iodine value.
19 Determination of Saponification value and unsaponifiable matter.
20 Determination of ester value.
21 Determination of Acid value.
22 Chemical tests for Acacia.
23 Chemical tests for Tragacanth.
24 Chemical tests for Agar.
25 Chemical tests for Starch.
26 Chemical tests for Lipids.(castor oil,sesame oil, shark liver oil,bees wax)
27 Chemical tests for Gelatin.

Scheme of Practical Examination:

	Sessionals	**Annual**
Identification	04	10
Synopsis	04	10
Major Experiment	07	20
Minor Experiment	03	15
Viva	02	15
Max Marks	**20**	**70**
Duration	**03hrs**	**04hrs**

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance.

2.4 PHARMACOLOGY – I (THEORY)

Theory : 3 Hrs. /Week

1. **Scope of the Subject:** This subject will provide an opportunity for the student to learn about the drug with regard to classification, pharmacodynamic and pharmacokinetic aspects, adverse effects, uses, dose, route of administration, precautions, contraindications and interaction with other drugs. In this subject, apart from general pharmacology, drugs acting on autonomic nervous system, cardiovascular system, central nervous system, blood and blood forming agents and renal system will be taught. In addition to theoretical knowledge, the basic practical knowledge relevant to therapeutics will be imparted.

2. **Objectives of the Subject :** Upon completion of the subject student shall be able to (Know, do, appreciate) –
   a. understand the pharmacological aspects of drugs falling under the above mentioned chapters;
   b. handle and carry out the animal experiments;
   c. appreciate the importance of pharmacology subject as a basis of therapeutics; and
   d. correlate and apply the knowledge therapeutically.

   Text books (Theory) (Author, Title, Edition, Publication Place, Publisher, Year of Publication)
   a. Tripathi, K. D. Essentials of medical pharmacology. 4th Ed, 1999. Publisher: Jaypee, Delhi.
   b. Satoskar, R.S. and Bhadarkar, S.D. Pharmacology and pharmacotherapeutics. 16th edition (single volume), 1999. Publisher: Popular, Dubai.
   c. Rang, H.P. & Dale, M.M. Pharmacology. 4th edition, 1999. Publisher: Churchill Living stone.

   Reference books (Theory)(Author, Title, Edition, Publication Place, Publisher, Publication Year)
   a. Goodman Gilman, A., Rall, T.W., Nies, A.I.S. and Taylor, P. Goodman and Gilman's The pharmacological Basis of therapeutics. 9th Ed, 1996. Publisher Mc Graw Hill, Pergamon press.
   b. Craig, C.R.&Stitzel, R.E. Modern Pharmacology. Latest edition. Publisher: Little Brown.Co
   c. Katzung, B.G. Basic and clinical pharmacology. Latest edition. Publisher: Prentice Hall, Int.
   d. Shargel and Leon. Applied Biopharmaceutics and pharmacokinetics. Latest edition. Publisher: Prentice Hall, London.

   Text books (Practical) :
   Kulkarni, S. K. and Dandia, P. C. Hand book of experimental pharmacology. Latest edition, Publisher: Vallab, Delhi.

   Reference books (Practical)
   a. Macleod, L.J. Pharmacological experiments on intact preparations. Latest edition, Publisher: Churchill livingstone.

b. Macleod, L.J. Pharmacological experiments on isolated preparations. Latest edition, Publisher: Churchill livingstone.
c. Ghosh, M.N. Fundamentals of experimental pharmacology. Latest edition, Publisher: Scientific book agency, Kolkata.
d. Ian Kitchen. Textbook of in vitro practical pharmacology. Latest edition, Publisher: Black well Scientific.

3. Detailed syllabus and lecture wise schedule :

Title of the topic

1. **General Pharmacology**
   a) Introduction, definitions and scope of pharmacology
   b) Routes of administration of drugs
   c) Pharmacokinetics (absorption, distribution, metabolism and excretion)
   d) Pharmacodynamics
   e) Factors modifying drug effects
   f) Drug toxicity - Acute, sub- acute and chronic toxicity.
   g) Pre-clinical evaluations
   h) Drug interactions

   Note: The term Pharmacology used here refers to the classification, mechanism of action, pharmacokinetics, pharmacodynamics, adverse effects, contraindications, Therapeutic uses, interactions and dose and route of administration.

2. **Pharmacology of drugs acting on ANS**
   a) Adrenergic and antiadrenergic drugs
   b) Cholinergic and anticholinergic drugs
   c) Neuromuscular blockers
   d) Mydriactics and miotics
   e) Drugs used in myasthenia gravis
   f) Drugs used in Parkinsonism

3. **Pharmacology of drugs acting on cardiovascular system**
   a) Antihypertensives
   b) Anti-anginal drugs
   c) Anti-arrhythmic drugs
   d) Drugs used for therapy of Congestive Heart Failure
   e) Drugs used for hyperlipidaemias

4. **Pharmacology of drugs acting on Central Nervous System**
   a) General anesthetics
   b) Sedatives and hypnotics
   c) Anticonvulsants
   d) Analgesic and anti-inflammatory agents
   e) *Psychotropic drugs*
   f) Alcohol and methyl alcohol
   g) CNS stimulants and cognition enhancers
   h) Pharmacology of local anaesthetics

5. **Pharmacology of Drugs acting on Respiratory tract**
   a) Bronchodilators
   b) Mucolytics
   c) Expectorants
   d) Antitussives
   e) NasalDecongestants

6. **Pharmacology of Hormones and Hormone antagonists**
   a) Thyroid and Antithyroid drugs
   b) Insulin, Insulin analogues and oral hypoglycemic agents
   c) Sex hormones and oral contraceptives
   d) Oxytocin and other stimulants and relaxants

7. **Pharmacology of autocoids and their antagonists**
   a) Histamines and Antihistaminics
   b) 5-Hydroxytryptamine and its antagonists
   c) Lipid derived autocoids and platelet activating factor

2.5 COMMUNITY PHARMACY (THEORY)

Theory : 2 Hrs. /Week

1. **Scope**: In the changing scenario of pharmacy practice in India, Community Pharmacists are expected to offer various pharmaceutical care services. In order to meet this demand, students will be learning various skills such as dispensing of drugs, responding to minor ailments by providing suitable safe medication, patient counselling, health screening services for improved patient care in the community set up.

2. **Objectives:** Upon completion of the course, the student shall be able to –
   a. know pharmaceutical care services;
   b. know the business and professional practice management skills in community pharmacies;
   c. do patient counselling & provide health screening services to public in community pharmacy;
   d. respond to minor ailments and provide appropriate medication;
   e. show empathy and sympathy to patients; and
   f. appreciate the concept of Rational drug therapy.

   Text Books:
   a. Health Education and Community Pharmacy by N.S.Parmar.
   b. WHO consultative group report.
   c. Drug store & Business management by Mohammed Ali & Jyoti.

   Reference books:
   a. Handbook of pharmacy – health care.Edt. Robin J Harman. The Pharmaceutical press.
   b. Comprehensive Pharmacy Review – Edt. Leon Shargel. Lippincott Williams & Wilkins.

   Special requirements:
   1. Either the college is having model community pharmacy (meeting the schedule N requirement) or sign MoU with at least 4-5 community pharmacies nearby to the college for training the students on dispensing and counselling activities.
   2. Special equipments like B.P apparatus, Glucometer, Peak flow meter, and apparatus for cholesterol estimation.

3. **Scheme of evaluation (80 Marks)**
   1. Synopsis 10
   2. Major Experiment 30
      (Counselling of patients with specific diseases – emphasis should be given on Counselling introduction, content, process and conclusion)
   3. Minor Experiment(Ability to measure B.P/ CBG / Lung function) 15
   4. Prescription Analysis (Analyzing the prescriptions for probable drug interaction and ability to tell the management) 15
   5. Viva – Voce 10

4. Lecture wise programme :

Topics

1 Definition, scope, of community pharmacy
Roles and responsibilities of Community pharmacist

2 Community Pharmacy Management
a) Selection of site, Space layout, and design
b) Staff, Materials- coding, stocking
c) Legal requirements
d) Maintenance of various registers
e) Use of Computers: Business and health care soft wares

3 Prescriptions – parts of prescription, legality & identification of medication related problems like drug interactions.

4 Inventory control in community pharmacy
Definition, various methods of Inventory Control
ABC, VED, EOQ, Lead time, safety stock

5 Pharmaceutical care
Definition and Principles of Pharmaceutical care.

6 Patient counselling
Definition, outcomes, various stages, barriers, Strategies to overcome barriers
Patient information leaflets- content, design, & layouts, advisory labels

7 Patient medication adherence
Definition, Factors affecting medication adherence, role of pharmacist in improving the adherence.

8 Health screening services
Definition, importance, methods for screening
Blood pressure/ blood sugar/ lung function and Cholesterol testing

9 OTC Medication- Definition, OTC medication list & Counselling

10 Health Education
WHO Definition of health, and health promotion, care for children, pregnant & breast feeding women, and geriatric patients.
Commonly occurring Communicable Diseases, causative agents,
Clinical presentations and prevention of communicable diseases – Tuberculosis, Hepatitis, Typhoid, Amoebiasis, Malaria, Leprosy,
Syphilis, Gonorrhea and AIDS
Balance diet, and treatment & prevention of deficiency disorders
Family planning – role of pharmacist

11 Responding to symptoms of minor ailments
Relevant pathophysiology, common drug therapy to,
Pain, GI disturbances (Nausea, Vomiting, Dyspepsia, diarrhea, constipation), Pyrexia, Opthalmic symptoms, worms infestations.

12 Essential Drugs concept and Rational Drug Therapy
Role of community pharmacist

13 Code of ethics for community pharmacists

2.6 PHARMACOTHERAPEUTICS - I (THEORY)

Theory : 3 Hrs. /Week

1. **Scope of the Subject:** This course is designed to impart knowledge and skills necessary for contribution to quality use of medicines. Chapters dealt cover briefly pathophysiology and mostly therapeutics of various diseases. This will enable the student to understand the pathophysiology of common diseases and their management.

2. **Objectives:** At completion of this subject it is expected that students will be able to understand –
   a. the pathophysiology of selected disease states and the rationale for drug therapy;
   b. the therapeutic approach to management of these diseases;
   c. the controversies in drug therapy;
   d. the importance of preparation of individualised therapeutic plans based on diagnosis;
   e. needs to identify the patient-specific parameters relevant in initiating drug therapy, and monitoring therapy (including alternatives, time-course of clinical and laboratory indices of therapeutic response and adverse effects);
   f. describe the pathophysiology of selected disease states and explain the rationale for drug therapy;
   g. summarise the therapeutic approach to management of these diseases including reference to the latest available evidence;
   h. discuss the controversies in drug therapy;
   i. discuss the preparation of individualised therapeutic plans based on diagnosis; and
   j. identify the patient-specific parameters relevant in initiating drug therapy, and monitoring therapy (including alternatives, time-course of clinical and laboratory indices of therapeutic response and adverse effects).

Text Books

a. Clinical Pharmacy and Therapeutics - Roger and Walker, Churchill Livingstone publication.
b. Pharmacotherapy: A Pathophysiologic approach - Joseph T. Dipiro et al. Appleton & Lange.

Reference Books

a. Pathologic basis of disease - Robins SL, W.B.Saunders publication.
b. Pathology and therapeutics for Pharmacists: A Basis for Clinical Pharmacy Practice - Green and Harris, Chapman and Hall publication.
c. Clinical Pharmacy and Therapeutics - Eric T. Herfindal, Williams and Wilkins Publication.
d. Applied Therapeutics:The clinical Use of Drugs. Lloyd Young and Koda-Kimble MA
e. Avery's Drug Treatment, 4th Edn, 1997, Adis International Limited.
f. Relevant review articles from recent medical and pharmaceutical literature.

3. Detailed syllabus and lecture wise schedule :

Etiopathogenesis and pharmacotherapy of diseases associated with following systems/ diseases

Title of the topic

1 **Cardiovascular system:** Hypertension, Congestive cardiac failure, Angina Pectoris, Myocardial infarction, , Hyperlipidaemias , Electrophysiology of heart and Arrhythmias

2 **Respiratory system :** Introduction to Pulmonary function test, Asthma, Chronic obstructive airways disease, Drug induced pulmonary diseases
Endocrine system : Diabetes, Thyroid diseases, Oral contraceptives, Hormone replacement therapy, Osteoporosis

3 **General prescribing guidelines for**
a. Paediatric patients
b. Geriatric patients
c. Pregnancy and breast feeding

4 **Ophthalmology:** Glaucoma, Conjunctivitis- viral & bacterial

5 **Introduction to rational drug use**
Definition, Role of pharmacist Essential drug concept Rational drug formulations

2.6 PHARMACOTHERAPEUTICS - I (PRACTICAL)

Practical : 3 Hrs./Week

Practicals :

Hospital postings in various departments designed to complement the lectures by providing practical clinical discussion; attending ward rounds; follow up the progress and changes made in drug therapy in allotted patients; case presentation upon discharge. Students are required to maintain a record of cases presented and the same should be submitted at the end of the course for evaluation. A minimum of 20 cases should be presented and recorded covering most common diseases.

Assignments :

Students are required to submit written assignments on the topics given to them. Topics allotted should cover recent developments in drug therapy of various diseases. A minimum of THREE assignments [1500 – 2000 words] should be submitted for evaluation.

Format of the assignment:

1. Minimum & Maximum number of pages.
2. Reference(s) shall be included at the end.
3. Assignment can be a combined presentation at the end of the academic year.
4. It shall be computer draft copy.
5. Name and signature of the student.
6. Time allocated for presentation may be 8+2 Min.

Scheme of Practical Examination:

	Sessionals	**Annual**
Synopsis	05	15
Major Experiment	10	25
Minor Experiment	03	15
Viva	02	15
Max Marks	**20**	**70**
Duration	**03hrs**	**04hrs**

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance).

Third Year

3.1 PHARMACOLOGY – II (THEORY)

Theory : 3 Hrs. /Week

1. **Scope of the Subject:** This subject will provide an opportunity for the student to learn about the drug with regard to classification, pharmacodynamic and pharmacokinetic aspects, adverse effects, uses, dose, route of administration, precautions, contraindications and interaction with other drugs. In this subject, drugs acting on autacoids, respiratory system, GIT, immune system and hormones, and pharmacology of autocoids and hormones will be concentrated. In addition, pharmacology of chemotherapeutic agents, vitamines, essential minerals and principles of toxicology are also taught. In addition to theoretical knowledge, the basic practical knowledge relevant to therapeutics will be imparted.

2. **Objectives of the Subject Upon completion of the subject student shall be able to:**
   a. understand the pharmacological aspects of drugs falling under the above mentioned chapters,
   b. carry out the animal experiments confidently,
   c. appreciate the importance of pharmacology subject as a basis of therapeutics, and
   d. correlate and apply the knowledge therapeutically.

Text books (Theory)

a. Tripathi, K. D. Essentials of medical pharmacology. 4th edition, 1999. Publisher: Jaypee, Delhi.
b. Satoskar, R.S. and Bhadarkar, S.D. Pharmacology and pharmacotherapeutics. 16th edition (single volume), 1999. Publisher: Popular, Dubai.
c. Rang, H.P. and Dale, M.M. Pharmacology. 4th edition, 1999. Publisher: Churchill Living stone.

Reference books (Theory)

a. Goodman Gilman, A., Rall, T.W., Nies, A.I.S. and Taylor, P. Goodman and Gilman's The pharmacological Basis of therapeutics. 9th edition, 1996. Publisher: Mc Graw Hill, Pergamon press.
b. Craig, C.R. and Stitzel, R.E. Modern Pharmacology. Latest edition. Publisher: Little Brown and company.
c. Katzung, B.G. Basic and clinical pharmacology. Latest edition. Publisher: Prentice Hall, International.
d. Gupta, P.K. and Salunkhe, D.K. Modern Toxicology. Volume I, II and III. Latest edition. Publisher: B.V. Gupta, Metropolitan Book Co. (p) Ltd, New Delhi.

Text books (Practical)

Kulkarni, S. K. and Dandia, P. C. Hand book of experimental pharmacology. Latest edition, Publisher: Vallab, Delhi.

Reference books (Practical) :

a. Macleod, L.J. Pharmacological experiments on intact preparations. Latest edition, Publisher: Churchill livingstone.
b. Macleod, L.J. Pharmacological experiments on isolated preparations. Latest edition, Publisher: Churchill livingstone.
c. Ghosh, M.N. Fundamentals of experimental pharmacology. Latest edition, Publisher: Scientific book agency, Kolkata.
d. Ian Kitchen. Textbook of in vitro practical pharmacology. Latest edition, Publisher: Black well Scientific.

3. Detailed syllabus and lecture wise schedule:

Title of the topic

1. **Pharmacology of Drugs acting on Blood and blood forming agents**
   a) Anticoagulants
   b) Thrombolytics and antiplatelet agents
   c) Haemopoietics and plasma expanders

2. **Pharmacology of drugs acting on Renal System**
   a) Diuretics
   b) Antidiuretics

3. **Chemotherapy**
   a) Introduction
   b) Sulfonamides and co-trimoxazole
   c) Penicillins and Cephalosporins
   d) Tetracyclins and Chloramphenicol
   e) Macrolides, Aminoglycosides, Polyene & Polypeptide antibiotics
   f) Quinolines and Fluroquinolines
   g) Antifungal antibiotics
   h) Antiviral agents
   i) Chemotherapy of tuberculosis and leprosy
   j) Chemotherapy of Malaria
   k) Chemotherapy of protozoal infections (amoebiasis, Giardiasis)
   l) Pharmacology of Anthelmintic drugs
   m) Chemotherapy of cancer (Neoplasms)

4 **Immunopharmacology**
   Pharmacology of immunosuppressants and stimulants

5. **Principles of Animal toxicology**
   Acute, sub acute and chronic toxicity

6. **The dynamic cell: The structures and functions of the components of the cell**
   a) Cell and macromolecules: Cellular classification, subcellular organelles, macromolecules, large macromolecular assemblies
   b) Chromosome structure: Pro and eukaryotic chromosome structures, chromatin structure, genome complexity, the flow of genetic information.
   c) DNA replication: General, bacterial and eukaryotic DNA replication.
   d) The cell cycle: Restriction point, cell cycle regulators and modifiers.
   e) Cell signaling: Communication between cells and their environment, ion-channels, signal transduction pathways (MAP kinase, P38 kinase, JNK, Ras and PI3-kinase pathways, biosensors.

   The Gene: Genome structure and function:
   a) Gene structure: Organization and elucidation of genetic code.
   b) Gene expression: Expression systems (pro and eukaryotic), genetic elements that control gene expression (nucleosomes, histones, acetylation, HDACS, DNA binding protein families.
   c) Transcription and Transcription factors: Basic principles of transcription in pro and eukaryotes. Transcription factors that regulate transcription in pro and eukaryotes.

   RNA processing: rRNA, tRNA and mRNA processing.
   Protein synthesis: Mechanisms of protein synthesis, initiation in eukaryotes, translation control and post-translation events
   Altered gene functions: Mutations, deletions, amplifications, LOH, traslocations, trinucleotide repeats and other genetic abnormalities. Oncogenes and tumor suppressor genes.
   The gene sequencing, mapping and cloning of human disease genes.
   Introduction to gene therapy and targeting.
   Recombinant DNA technology: principles. Processes (gene transfer technology) and applications

Books:

1 Molecular Biology of the Cell by Alberts B., Bray, D., Lewis, J., Raff M., Roberts, K and Watson, JD, 3rd edition.
2 Molecular Cell Biology By Lodish, H., Baltimore, D., Berk, A et al., 5th edition.
3 Molecular Biology by Turner, PC., McLennan, AG., Bates, AD and White MRH 2nd edition.
4 Genes VIII by Lewin, B., (2004)
5 Pharmaceutical Biotechnology, by Crommelin, DJA and Sindelar RD (1997)
6 Recombinant DNA by Watson, JD., Gilman, M., et al., (1996)
7 Biopharmaceutical: Biochemistry and Biotechnology by Walsh, G., (1998)

3.1 PHARMACOLOGY – II (PRACTICAL)

Practical : 3 Hrs./Week

List of Experiments:

1. Study of laboratory animals and their handling (a. Frogs, b. Mice, c. Rats, d. Guinea pigs, e. Rabbits).
2. Study of physiological salt solutions used in experimental pharmacology.
3. Study of laboratory appliances used in experimental pharmacology.
4. Study of use of anesthetics in laboratory animals.
5. To record the dose response curve of Ach using isolated ileum/rectus abdominis muscle preparation.
6. To carry out bioassay of Ach using isolated ileum/rectus abdominis muscle preparation by interpolation method.
7. To carry out bioassay of Ach using isolated ileum/rectus abdominis muscle preparation by three point method.
8. To record the dose response curve of Histamine using isolated guinea-pig ileum preparation.
9. Study of agonistic and antagonistic effects of drugs using isolated guinea-pig ileum preparation.
10. To carry out bioassay of Histamine using isolated guinea-pig ileum preparation by interpolation method.
11. To carry out bioassay of Histamine using guinea-pig ileum preparation by three point method.
12. To study the routes of administration of drugs in animals (Rats, Mice, Rabbits).
13. Study of theory, principle, procedure involved and interpretation of given results for the following experiments:
    a) Analgesic property of drug using analgesiometer.
    b) Antiinflammatory effect of drugs using rat-paw edema method.
    c) Anticonvulsant activity of drugs using maximal electroshock and pentylene tetrazole methods.
    d) Antidepressant activity of drugs using pole climbing apparatus and pentobarbitone induced sleeping time methods.
    e) Locomotor activity evaluation of drugs using actophotometer and rotorod.
    f) Cardiotonic activity of drugs using isolated frog heart and mammalian heart preparations.

Scheme of Practical Examination:

	Sessionals	**Annual**
Identification	02	10
Synopsis	04	10
Major Experiment (Bioassay)	08	30
Minor Experiment (Interpretation of given Graph or simulated experiment)	04	10
Viva	02	10
Max Marks	**20**	**70**
Duration	**3hrs**	**4hrs**

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance).

3.2 PHARMACEUTICAL ANALYSIS (THEORY)

Theory : 3 Hrs. /Week

1. **Quality Assurance:**
   a. Introduction, sources of quality variation, control of quality variation.
   b. Concept of statistical quality control.
   c. Validation methods- quality of equipment, validation of equipment and validation of analytical instruments and calibration.
   d. GLP, ISO 9000.
   e. Total quality management, quality review and documentation.
   f. ICH- international conference for harmonization-guidelines.
   g. Regulatory control.

2. **Chromatography:**

   Introduction, history, classification, separation techniques, choice of methods. The following techniques be discussed with relevant examples of pharmaceutical products involving principles and techniques of separation of drugs from excipients.

   a. **Column Chromatography**: Adsorption column chromatography, Operational technique, frontal analysis and elution analysis. Factors affecting column efficiency, applications and partition chromatography.
   b. **TLC**: Introduction, principle, techniques, R_f value and applications.
   c. **PC:** Introduction, principle, types of paper chromatography, preparation techniques, development techniques, applications.
   d. **Ion-exchange chromatography**: Introduction, principles, types of ion exchange synthetic resins, physical properties, factors affecting ion exchange, methodology and applications.
   e. **HPLC**: Introduction, theory, instrumentation, and applications.
   f. **HPTLC**: Introduction, theory, instrumentation, and applications.
   g. **Gas Chromatography**: Introduction, theory, instrumentation-carrier gases, types of columns, stationary phases in GLC & GSC. Detectors- Flame ionization detectors, electron capture detector, thermal conductivity detector. Typical gas chromatogram, derivatisation techniques, programmed temperature gas chromatography, applications.
   h. **Electrophoresis**: Principles of separation, equipment for paper and gel electrophoresis, and application.
   i. **Gel filtration** and **affinity chromatography**: Introduction, technique, applications.

3. **Electrometric Methods:**

   Theoretical aspects, instrumentation, interpretation of data/spectra and analytical applications be discussed on the following topics.

   a. **Potentiometry**: Electrical potential, electrochemical cell, reference electrodes, indicator electrodes, measurement of potential and pH, construction and working of electrodes, Potentiometric titrations, methods of detecting end point, Karl Fischer titration.
   b. **Conductometry**: Introduction, conductivity cell, conductometric titrations and applications.
   c. **Polarography**: Instrumentation, DME, residual current, diffusion current and limiting current, polarographic wave, Ilkovic's equation, Effect of oxygen on polarographic wave, Polarographic maxima and suppressors and applications.
   d. **Amperometric Titrations:** Introduction, types of electrodes used, reference and indicator electrode, instrumentation, titration procedure, advantages and disadvantages of Amperometry over potentiometry. Pharma applications.

4. **Spectroscopy:**

   Theoretical aspects, instrumentation, elements of interpretation of data/spectra and application of analytical techniques be discussed on:

   a. **Absorption Spectroscopy:**

      - Theory of electronic, atomic and molecular spectra. Fundamental laws of photometry, Beer-Lambert's Law, application and its deviation, limitation of Beer law, application of the law to single and multiple component analysis, measurement of equilibrium constant and rate constant by spectroscopy. Spectra of isolated chromophores, auxochromes, batho-chromic shift, hypsochromic shift, hyperchromic and hypochromic effect, effect of solvent on absorption spectra, molecular structure and infrared spectra.
        Instrumentation – Photometer, U.V.-Visible spectrophotometer – sources of U.V.-Visible radiations, collimating systems, monochromators, samples cells and following detectors-Photocell, Barrier layer cell, Phototube, Diode array, applications of U.V.-Visible spectroscopy in pharmacy and spectrophotometric titrations.

      - **Infrared Spectroscopy**: Vibrational transitions, frequency – structure correlations, Infrared absorption bands, Instrumentation–IR spectro-meter – sources of IR, Collimating systems, monochromators, sample cells, sample handling in IR spectroscopy and detectors– Thermocouple, Golay Cells, Thermistor, Bolometer, Pyroelectric detector, Applications of IR in pharmacy.

- **Fluorimetric Analysis:** Theory, luminescence, factors affecting fluorescence, quenching. Instrumentation, Applications, fluorescent indicators, study of pharmaceutically important compounds estimated by fluorimetry.

b. **Flame Photometry:** Theory, nebulisation, flame and flame temperature, interferences, flame spectrometric techniques and instrumentation and pharmaceutical applications.

c. **Atomic Absorption Spectrometry:** Introduction, Theory, types of electrodes, instrumentation and applications.

d. **Atomic Emission Spectroscopy**: Spectroscopic sources, atomic emission spectrometers, photographic and photoelectric detection.

e. **NMR & ESR (introduction only):** Introduction, theoretical aspects and applications.

f. **Mass Spectroscopy**: (**Introduction only**) – Fragmentation, types of ions produced mass spectrum and applications.

g. **Polarimetry: (Introduction only**) – Introduction to optical rotatory dispersion, circular dichroism, polarimeter.

h. **X-RAY Diffraction: (Introduction only**) – Theory, reciprocal lattice concept, diffraction patterns and applications.

i. **Thermal Analysis**: Introduction, instrumentation, applications, and DSC and DTA.

3.2 PHARMACEUTICAL ANALYSIS (PRACTICAL)

Practical : 3 Hrs./Week

List of Experiments:

1. Separation and identification of Amino Acids by Paper Chromatography.
2. Separation and identification of Sulpha drugs by TLC technique.
3. Effect of pH and solvent on the UV spectrum of given compound.
4. Comparison of the UV spectrum of a compound with that of its derivatives.
5. Determination of dissociation constant of indicators using UV-Visible spectroscopy.
6. Conductometric titration of mixture of acids with a strong base.
7. Potentiometric titration of a acid with a strong base.
8. Estimation of drugs by Fluorimetric technique.
9. Study of quenching effect in fluorimetry.
10. Colourimetric estimation of Supha drugs using BMR reagent.

11. Simultaneous estimation of two drugs present in given formulation.
12. Assay of Salicylic Acid by colourimetry.
13. Determination of Chlorides and Sulphates in Calcium gluconate by Nepheloturbidimetric Method.
14. Determination of Na/K by Flame Photometry.
15. Determination of pKa using pH meter.
16. Determination of specific rotation.
17. Comparison of the IR spectrum of a compound with that of its derivatives.
18. Demonstration of HPLC.
19. Demonstration of HPTLC.
20. Demonstration of GC-MS.
21. Demonstration of DSC.
22. Interpretation of NMR spectra of any one compound.

Reference Books:

1. Text Book of Pharm. Analysis by Higuchi. T and Hasen. E. B., New York Inter Science Publishers.
2. Quantitative Pharma. Analysis by Jenkins, The Blakiston division, New York.
3. Quantitative Drug Analysis, by Garrot. D, Chapman & Hall Ltd., London.
4. Undergraduate Instrumental Analysis by James. E., CBS Publishers.
5. Instrumental Analysis by Willard and Merritt, EWP, East West Press Ltd., Delhi/Madras.
6. Pharm Analysis by Skoog and West, Sounders Manipal College Publishing.
7. Text Book of Chemical Analysis, by A.I.Vogel, ELBS with Macmillan press, Hampshire.
8. Textbook of Pharm. Analysis by K.A.Connors, John Wiley & Sons, New York, Brisbane, Singapore.
9. Textbook of Pharm. Analysis (Practical) by Beckett & Stenlake, CBS Publishers, Delhi.
10. Textbook of Drug Analysis by P.D. Sethi., CBS Publishers, Delhi.
11. Spectroscopy by Silverstein, John & Wiley & Sons. Inc., Canada & Singapore.
12. How to practise GMP-A Plan for total quality control by P.P. Sharma, Vandana Publications, Agra.
13. The Science & Practice of Pharmacy by Remington Vol-I & II, Mack Publishing Co. Pennsylvania.
14. TLC by Stahl, Spring Verlay.
15. Text Book of Pharm. Chemistry by Chatten, CBS Publications.
16. Spectroscopy by William Kemp, ELBS with Macmillan Press, Hampshire.
17. I.P.-1996, The Controller of Publications, New Delhi.
18. BPC- Dept. of Health, U.K. for HMSO.
19. USP - Mack Publishing Co., Easton, PA.
20. The Extra Pharmacopoeia – The Pharm. Press, London.

Practicals

Title of the Experiment:

1 Study of agonistic and antagonistic effects of drugs using Guinea-pig ileum preparation.**
2 To study the effects of drugs on intestinal motility using frog's esophagus model*
3 To study the effects of drugs using rat uterus preparation.**
4 To study the anticonvulsant property of drugs (any one model).*
5 To study antihistaminic property of drug using histamine induced anaphylactic reaction in guinea pigs.
6 To study the apomorphine-induced compulsive behaviour (stereotypy) in mice.*
7 To study the muscle relaxant property of diazepam in mice using rotarod apparatus.*
8 To study the antiinflammatory property of indomethacin against carrageenan-induced paw oedema.**
9 To study the anxiolytic effect of diazepam in mice using mirrored-chamber apparatus.**
10 To demonstrate the effect of various drugs on the blood pressure and respiration of anaesthetized dog.
11 To study the effect of anthelmintics on earthworms.
12 To study the taming effect of chlorpromazine.*
13 To study the effects of drugs on vas deferense of the male rat.**
14 To study the effect of drugs on pesticide toxicity using rats as model.
15 To study the effect of drugs on heavy metal toxicity.

** indicate major experiment & * indicate minor experiment

Scheme of Practical Examination:

	Sessionals	**Annual**
Synopsis	05	15
Major Experiment	10	25
Minor Experiment	03	15
Viva	02	15
Max Marks	**20**	**70**
Duration	**03hrs**	**04hrs**

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance).

3.3 PHARMACOTHERAPEUTICS – II (THEORY)

Theory : 3 Hrs. /Week

1. **Scope of the Subject:** This course is designed to impart knowledge and skills necessary for contribution to quality use of medicines. Chapters dealt cover briefly pathophysiology and mostly therapeutics of various diseases. This will enable the student to understand the pathophysiology of common diseases and their management.

2. **Objectives of the Subject Upon completion of the subject student shall be able to –**
   a. know the pathophysiology of selected disease states and the rationale for drug therapy
   b. know the therapeutic approach to management of these diseases;
   c. know the controversies in drug therapy;
   d. know the importance of preparation of individualised therapeutic plans based on diagnosis; and
   e. appreciate the needs to identify the patient-specific parameters relevant in initiating drug therapy, and monitoring therapy (including alternatives, time-course of clinical and laboratory indices of therapeutic response and adverse effects).

   Text books (Theory)
   Clinical Pharmacy and Therapeutics - Roger and Walker, Churchill Livingstone publication

   Reference books (Theory)
   a. Pharmacotherapy: A Pathophysiologic approach - Joseph T. Dipiro et al. Appleton & Lange
   b. Clinical Pharmacy and Therapeutics - Eric T. Herfindal, Williams and Wilkins Publication
   c. Applied Therapeutics: The clinical Use of Drugs. Lloyd Young and Koda-Kimble MA]

3. **Detailed syllabus and lecture wise schedule :**

   Etiopathogenesis and pharmacotherapy of diseases associated with following systems / diseases –

   Title of the topic

   1. **Infectious disease:** Guidelines for the rational use of antibiotics and surgical Prophylaxis, Tuberculosis, Meningitis, Respiratory tract infections, Gastroenteritis, Endocarditis, Septicemia, Urinary tract infections, Protozoal infection- Malaria, HIV & Opportunistic infections, Fungal infections, Viral infections, Gonarrhoea and Syphillis
   2 **Musculoskeletal disorders**
   Rheumatoid arthritis, Osteoarthritis, Gout, Spondylitis, Systemic lupus erythematosus.
   3 **Renal system**
   Acute Renal Failure, Chronic Renal Failure, Renal Dialysis, Drug induced renal disorders

4 **Oncology:** Basic principles of Cancer therapy, General introduction to cancer chemotherapeutic agents, Chemotherapy of breast cancer, leukemia. Management of chemotherapy nausea and emesis

5 **Dermatology:** Psoriasis, Scabies, Eczema, Impetigo

3.3 PHARMACOTHERAPEUTICS – II (PRACTICAL)

Practical : 3 Hrs./Week

Practicals :

Hospital postings in various departments designed to complement the lectures by providing practical clinical discussion; attending ward rounds; follow up the progress and changes made in drug therapy in allotted patients; case presentation upon discharge. Students are required to maintain a record of cases presented and the same should be submitted at the end of the course for evaluation.

The student shall be trained to understand the principle and practice involved in selection of drug therapy including clinical discussion.

A minimum of 20 cases should be presented and recorded covering most common diseases.

Assignments :

Students are required to submit written assignments on the topics given to them. Topics allotted should cover recent developments in drug therapy of various diseases. A minimum of THREE assignments [1500 – 2000 words] should be submitted for evaluation.

Format of the assignment :

1. Minimum & Maximum number of pages.
2. Reference(s) shall be included at the end.
3. Assignment can be a combined presentation at the end of the academic year.
4. It shall be computer draft copy.
5. Name and signature of the student.
6. Time allocated for presentation may be 8+2 Min.

Scheme of Practical Examination :

	Sessionals	**Annual**
Synopsis	05	15
Major Experiment	10	25
Minor Experiment	03	15
Viva	02	15
Max Marks	**20**	**70**
Duration	**03hrs**	**04hrs**

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance).

3.4 PHARMACEUTICAL JURISPRUDENCE (THEORY)

Theory : 2 Hrs. /Week

1. **Scope of the Subject:** (4-6 lines): This course exposes the student to several important legislations related to the profession of pharmacy in India. The Drugs and Cosmetics Act, along with its amendments are the core of this course. Other acts, which are covered, include the Pharmacy Act, dangerous drugs, medicinal and toilet preparation Act etc. Besides this the new drug policy, professional ethics, DPCO, patent and design Act will be discussed.

2. **Objectives of the Subject:** Upon completion of the subject student shall be able to (Know, do, and appreciate) –
   a. practice the Professional ethics;
   b. understand the various concepts of the pharmaceutical legislation in India;
   c. know the various parameters in the Drug and Cosmetic Act and rules;
   d. know the Drug policy, DPCO, Patent and design act;
   e. understand the labeling requirements and packaging guidelines for drugs and cosmetics;
   f. be able to understand the concepts of Dangerous Drugs Act, Pharmacy Act and Excise duties Act; and
   g. other laws as prescribed by the Pharmacy Council of India from time to time including International Laws.

   Text books (Theory)

   Mithal , B M. Textbook of Forensic Pharmacy. Calcutta :National; 1988.

   Reference books (Theory)

   a. Singh, KK, editor. Beotra's the Laws of Drugs, Medicines & cosmetics. Allahabad: Law Book House; 1984.
   b. Jain, NK. A Textbook of forensic pharmacy. Delhi: Vallabh prakashan ; 1995.
   c. Reports of the Pharmaceutical enquiry Committee
   d. I.D.M.A., Mumbai. DPCO 1995
   e. Various reports of Amendments.
   f. Deshapande, S.W. The drugs and magic remedies act 1954 and rules 1955. Mumbai: Susmit Publications; 1998.
   g. Eastern Book Company .The narcotic and psychotropic substances act 1985, Lucknow: Eastern; 1987.

3. **Detailed syllabus and lecture wise schedule:**

   Title of the topic

   1. **Pharmaceutical Legislations –** A brief review.
   2. Principle and Significance of professional ethics. Critical study of the code of pharmaceutical ethics drafted by PCI.
   3. **Drugs and Cosmetics Act, 1940,and its rules 1945.**
      Objectives, Legal definition, Study of Schedule's with reference to Schedule B, C&C1, D, E1, F&F1, F2, F3, FF, G, H, J, K, M, N, P, R, V, W, X, Y.
      Sales, Import, labeling and packaging of Drugs And Cosmetics Provisions Relating to Indigenous Systems.
      Constitution and Functions of DTAB,DCC,CDL.
      Qualification and duties –Govt. analyst and Drugs Inspector.

4. **Pharmacy Act –1948**.
   Objectives Legal Definitions, General Study, Constitution and Functions of State & Central Council, Registration & Procedure, ER.
5. **Medicinal and Toilet Preparation Act –1955**.
   Objectives, Legal Definitions, Licensing, Bonded and Non Bonded Laboratory, Ware Housing, Manufacture of Ayurvedic, Homeopathic, Patent & Proprietory Preparations.
6. **Narcotic Drugs and Psychotropic substances Act-1985 and Rules**. Objectives, Legal Definitions, General Study, Constitution and Functions of narcotic & Psychotropic Consultative Committee, National Fund for Controlling the Drug Abuse, Prohibition, Control and regulations, Schedules to the Act.
7. **Study of Salient Features of Drugs and magic remedies Act and its rules.**
8. **Study of essential Commodities Act Relevant to drugs price control Order.**
9. **Drug Price control Order & National Drug Policy (Current).**
10. **Prevention Of Cruelty to animals Act-1960.**
11. **Patents & design Act-1970.**
12. **Brief study of prescription and Non-prescription Products.**

4. Assignments:

Format of the assignment

1. Minimum & Maximum number of pages
2. It shall be a computer draft copy
3. Reference(s) shall be included at the end.
4. Name and signature of the student
5. Assignment can be a combined presentation at the end of the academic year.
6. Time allocated for presentation may be 8+2 Min

Case studies relating to

1. Drugs and Cosmetics Act and rules along with its amendments, Dangerous Drugs Act, Medicinal and Toilet preparation Act, New Drug Policy, Professional Ethics, Drugs (Price control) Order, Patent and Design Act.
2. Various prescription and non-prescription products.
3. Medical and surgical accessories.
4. Diagnostic aids and appliances available in the market.

3.5 MEDICINAL CHEMISTRY (THEORY)

Theory : 3 Hrs. /Week

1. Modern concept of rational drug design: A brief introduction to Quantitative Structure Activity Relationaship (QSAR), prodrug, combinatorial chemistry and computer aided drug design (CADD) and concept of antisense molecules.

   A study of the development of the following classes of drugs including SAR, mechanism of action, synthesis of important compounds, chemical nomenclature, brand names of important marketed products and their side effects.

2. Anti-infective agents
   a) Local anti-infective agents
   b) Preservatives
   c) Antifungal agents
   d) Urinary tract anti-infectives
   e) Antitubercular agents
   f) Antiviral agents and Anti AIDS agents
   g) Antiprotozoal agents
   h) Anthelmentics
   i) Antiscabies and Antipedicular agents
3. Sulphonamides and sulphones
4. Antimalarials
5. Antibiotics
6. Antineoplastic agents
7. Cardiovascular agents
   a) Antihypertensive agents
   b) Antianginal agents and vasodilators
   c) Antiarrhythmic agents
   d) Antihyperlipidemic agents
   e) Coagulants and Anticoagulants
   f) Endocrine
8. Hypoglycemic agents
9. Thyroid and Antithyroid agents
10. Diureties
11. Diagnostic agents
12. Steroidal Hormones and Adrenocorticoids

3.5 MEDICINAL CHEMISTRY (PRACTICAL)

Practical : 3 Hrs./Week

1. Assays of important drugs from the course content.
2. Preparation of medicinally important compounds or intermediates required for synthesis of drugs.
3. Monograph analysis of important drugs.
4. Determination of partition coefficients, dissociation constants and molar refractivity of compounds for QSAR analysis.

Reference Books:

a. Wilson and Gisvold's Text book of Organic, Medicinal and Pharmaceutical Chemistry, Lippincott-Raven Publishers-New York, Philadelphia.

b. William.O.Foye, Principles of Medicinal Chemistry, B.I. Waverly Pvt. Ltd., New Delhi.

c. Burgers, Medicinal Chemistry, M.E.,Welly Med.Chemistry M.E. Walffed Johnwilley and Sons, Wiley-interscience Publication, New York, Toranto.

d. A Text Book of Medicinal Chemistry Vol. I and II by Surendra N. Pandeya, S.G. Publisher, 6, Dildayal Nagar, Varanasi -10.

e. Indian Pharmacopoeia 1985 and 1996. The Controller of Publications, Civil Lines, Delhi - 54.

f. Current Index of Medical Specialities (CIMS) and MIMS India, MIMS, A.E. Morgan Publications (I) Pvt. Ltd, New Delhi-19.

g. Organic Drug Synthesis-Ledniser Mitzsher Vol. I and II.

h. Pharmaceutical Chemistry drug Synthesis Vol. I and II by H. J. Roth and A. Kleemann.

i. The Science and Practice of Pharmacy Vol. 1 and 2, Remington, MACK Publishing Company, Easton, Pennsylvania.

3.6 PHARMACEUTICAL FORMULATIONS (THEORY)

Theory : 2 Hrs. /Week

1. **Scope of the Subject:** Scope and objectives of the course: Subject deals with the formulation and evaluation of various pharmaceutical dosage forms.

2. **Objectives of the Subject:** Upon completion of the subject student shall be able to (Know, do, appreciate) –
   a. understand the principle involved in formulation of various pharmaceutical dosage forms;
   b. prepare various pharmaceutical formulation;
   c. perform evaluation of pharmaceutical dosage forms; and
   d. understand and appreciate the concept of bioavailability and bioequivalence, their role in clinical situations.

   Text books (Theory)
   a. Pharmaceutical dosage forms, Vol, I,II and III by lachman
   b. Rowlings Text book of Pharmaceutics
   c. Tutorial Pharmacy – Cooper &Gun

   Reference books (Theory)
   a. Remington's Pharmaceutical Sciences
   b. USP/BP/IP

3. **Detailed syllabus and lecture wise schedule:**

   Title of the topic

   1. Pharmaceutical dosage form- concept and classification
   2. **Tablets**: Formulation of different types of tablets, tablet excipients, granulation techniques quality control and evaluation of tablets. Tablet coating, Type of coating, quality control tests for coated tablet.
   3. **Capsules**; Production and filling of hard gelatin capsules, Raw material for shell, finishing, quality control tests for capsules. Production and filling of soft gelatin capsules, quality control tests for soft gelatin capsules.
   4. **Liquid orals**: Formulation and evaluation of suspensions, emulsions and solutions. Stability of these preparations
   5. **Parenterals** Introduction Containers used for Parenterals (including official tests) Formulation of large and small volume Parenterals Sterilization
   6. **Ophthalmic preparations (Semi – Solids)**: Introduction and classification Factors affecting absorption and anatomy of skin Packaging storage and labeling, Ointments Types of Ointment Base Preparation of ointment, Jellies Types of jellies Formulation of jellies Suppositories, Method of preparation, Types Packaging
   7. Definition and concept of **Controlled and novel Drug delivery systems** with available examples, viz. parentral, trans dermal, buccal, rectal, nasal, implants, ocular

3.6 PHARMACEUTICAL FORMULATIONS (PRACTICAL)

Practical : 3 Hrs./Week

List of Experiments :

1. **Manufacture of Tablets**
   - **a.** Ordinary compressed tablet-wet granulation
   - **b.** Tablets prepared by direct compression.
   - **c.** Soluble tablet.
   - **d.** Chewable tablet.
2. **Formulation and filling of hard gelatin capsules**
3. **Manufacture of parenterals**
   - **a.** Ascorbic acid injection
   - **b.** Calcium gluconate injection
   - **c.** Sodium chloride infusion.
   - **d.** Dextrose and Sodium chloride injection/ infusion.
4. **Evaluation of Pharmaceutical formulations (QC tests)**
   - **a.** Tablets
   - **b.** Capsules
   - **c.** Injections
5. **Formulation of two liquid oral preparations and evaluation by assay**
   - **a.** Solution: Paracetamol Syrup
   - **b.** Antacid suspensions- Aluminum hydroxide gel
6. **Formulation of semisolids and evaluation by assay**
   - **a.** Salicyclic acid and benzoic acid ointment
   - **b.** Gel formulation Diclofenac gel
7. **Cosmetic preparations**
   - **a.** Lipsticks
   - **b.** Cold cream and vanishing cream
   - **c.** Clear liquid shampoo
   - **d.** Tooth paste and tooth powders.
8. **Tablet coating (demonstration)**

Scheme of Practical Examination :

	Sessionals	**Annual**
Synopsis	05	15
Major Experiment	10	25
Minor Experiment	03	15
Viva	02	15
Max Marks	**20**	**70**
Duration	**03hrs**	**04hrs**

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance).

Fourth Year

4.1 PHARMACOTHERAPEUTICS – III (THEORY)

Theory : 3 Hrs. /Week

1. **Scope :** This course is designed to impart knowledge and skills necessary for contribution to quality use of medicines. Chapters dealt cover briefly pathophysiology and mostly therapeutics of various diseases. This will enable the student to understand the pathophysiology of common diseases and their management.

2. **Objectives:** At completion of this subject it is expected that students will be able to understand –
   a. the pathophysiology of selected disease states and the rationale for drug therapy;
   b. the therapeutic approach to management of these diseases;
   c. the controversies in drug therapy;
   d. the importance of preparation of individualised therapeutic plans based on diagnosis;
   e. needs to identify the patient-specific parameters relevant in initiating drug therapy, and monitoring therapy (including alternatives, time-course of clinical and laboratory indices of therapeutic response and adverse effects);
   f. describe the pathophysiology of selected disease states and explain the rationale for drug therapy;
   g. to summarize the therapeutic approach to management of these diseases including reference to the latest available evidence;
   h. to discuss the controversies in drug therapy;
   i. to discuss the preparation of individualised therapeutic plans based on diagnosis; and
   j. identify the patient-specific parameters relevant in initiating drug therapy, and monitoring therapy (including alternatives, time-course of clinical and laboratory indices of therapeutic response and adverse effects).

Text Books

a. Clinical Pharmacy and Therapeutics - Roger and Walker, Churchill Livingstone publication
b. Pharmacotherapy: A Pathophysiologic approach - Joseph T. Dipiro et al. Appleton & Lange

Reference Books

a. Pathologic basis of disease - Robins SL, W.B.Saunders publication
b. Pathology and therapeutics for Pharmacists: A Basis for Clinical Pharmacy Practice - Green and Harris, Chapman and Hall publication
c. Clinical Pharmacy and Therapeutics - Eric T. Herfindal, Williams and Wilkins Publication
d. Applied Therapeutics: The clinical Use of Drugs. Lloyd Young and Koda-Kimble MA
e. Avery's Drug Treatment, 4th Edn, 1997, Adis International Limited.
f. Relevant review articles from recent medical and pharmaceutical literature.

4.1 PHARMACOTHERAPEUTICS – III (PRACTICAL)

Practical : 3 Hrs./Week

Practicals:

Hospital postings for a period of at least 50 hours is required to understand the principles and practice involved in ward round participation and clinical discussion on selection of drug therapy. Students are required to maintain a record of 15 cases observed in the ward and the same should be submitted at the end of the course for evaluation. Each student should present at least two medical cases they have observed and followed in the wards.

Etiopathogenesis and pharmacotherapy of diseases associated with following systems/ diseases:

Title of the topic

1 **Gastrointestinal system:** Peptic ulcer disease, Gastro Esophageal Reflux Disease, Inflammatory bowel disease, Liver disorders - Alcoholic liver disease, Viral hepatitis including jaundice, and Drug induced liver disorders.
2 **Haematological system:** Anaemias, Venous thromboembolism, Drug induced blood disorders.
3 **Nervous system:** Epilepsy, Parkinsonism, Stroke, Alzheimer's disease,
4 **Psychiatry disorders:** Schizophrenia, Affective disorders, Anxiety disorders, Sleep disorders, Obsessive Compulsive disorders
5 Pain management including Pain pathways, neuralgias, headaches.
6 Evidence Based Medicine

Assignments:

Students are required to submit written assignments on the topics given to them. Topics allotted should cover recent developments in drug therapy of various diseases. A minimum of THREE assignments [1500 – 2000 words] should be submitted for evaluation.

Format of the assignment:

1. Minimum & Maximum number of pages
2. Reference(s) shall be included at the end.
3. Assignment can be a combined presentation at the end of the academic year
4. It shall be computer draft copy
5. Name and signature of the student
6. Time allocated for presentation may be 8+2 Min.

Scheme of Practical Examination :

	Sessionals	**Annual**
Synopsis	05	15
Major Experiment	10	25
Minor Experiment	03	15
Viva	02	15
Max Marks	**20**	**70**
Duration	**03hrs**	**04hrs**

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance).

4.2 HOSPITAL PHARMACY (THEORY)

Theory : 2 Hrs. /Week

1. **Scope**: In the changing scenario of pharmacy practice in India, for successful practice of Hospital Pharmacy, the students are required to learn various skills like drug distribution, drug dispensing, manufacturing of parenteral preparations, drug information, patient counselling, and therapeutic drug monitoring for improved patient care.

2. **Objectives:** Upon completion of the course, the student shall be able to –
   a. know various drug distribution methods;
   b. know the professional practice management skills in hospital pharmacies;
   c. provide unbiased drug information to the doctors;
   d. know the manufacturing practices of various formulations in hospital set up;
   e. appreciate the practice based research methods; and
   f. appreciate the stores management and inventory control.

   Text books: (latest editions)
   a. Hospital pharmacy by William .E. Hassan
   b. A text book of Hospital Pharmacyby S.H.Merchant & Dr. J.S. Qadry. Revised by R.K.Goyal & R.K. Parikh

   References:
   a. WHO consultative group report.
   b. R.P.S. Vol.2. Part –B; Pharmacy Practice section.
   c. Handbook of pharmacy – health care. Edt. Robin J Harman. The Pharmaceutical press.

3. **Lecture wise programme :**

   Topics

   1 Hospital - its Organisation and functions

   2 Hospital pharmacy-Organisation and management
   a) Organizational structure-Staff, Infrastructure & work load statistics
   b) Management of materials and finance
   c) Roles & responsibilities of hospital pharmacist

   3 The Budget – Preparation and implementation

   4 Hospital drug policy
   a) Pharmacy and Therapeutic committee (PTC)
   b) Hospital formulary
   c) Hospital committees
   - Infection committee
   - Research and ethical committee

   d) developing therapeutic guidelines
   e) Hospital pharmacy communication - Newsletter

5 Hospital pharmacy services

a) Procurement & warehousing of drugs and Pharmaceuticals
b) Inventory control
   Definition, various methods of Inventory Control
   ABC, VED, EOQ, Lead time, safety stock
c) Drug distribution in the hospital
   i) Individual prescription method
   ii) Floor stock method
   iii) Unit dose drug distribution method
d) Distribution of Narcotic and other controlled substances
e) Central sterile supply services – Role of pharmacist

6 Manufacture of Pharmaceutical preparations

a) Sterile formulations – large and small volume parenterals
b) Manufacture of Ointments, Liquids, and creams
c) Manufacturing of Tablets, granules, capsules, and powders
d) Total parenteral nutrition

7 Continuing professional development programs

Education and training

8 Radio Pharmaceuticals – Handling and packaging

9 Professional Relations and practices of hospital pharmacist

4.2 HOSPITAL PHARMACY (PRACTICAL)

Practical : 3 Hrs./Week

1. Assessment of drug interactions in the given prescriptions
2. Manufacture of parenteral formulations, powders.
3. Drug information queries.
4. Inventory control

List of Assignments:

1. Design and Management of Hospital pharmacy department for a 300 bedded hospital.
2. Pharmacy and Therapeutics committee – Organization, functions, and limitations.
3. Development of a hospital formulary for 300 bedded teaching hospital
4. Preparation of ABC analysis of drugs sold in one month from the pharmacy.
5. Different phases of clinical trials with elements to be evaluated.
6. Various sources of drug information and systematic approach to provide unbiased drug information.
7. Evaluation of prescriptions generated in hospital for drug interactions and find out the suitable management.

Special requirements:

1. Each college should sign MoU with nearby local hospital having minimum 150 beds for providing necessary training to the students' on hospital pharmacy activities.
2. Well equipped with various resources of drug information.

Scheme of Practical Examination:

	Sessionals	**Annual**
Synopsis	05	15
Major Experiment	10	25
Minor Experiment	03	15
Viva	02	15
Max Marks	**20**	**70**
Duration	**03hrs**	**04hrs**

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance).

4.3 CLINICAL PHARMACY (THEORY)

Theory : 3 Hrs. /Week

1. Objectives of the Subject :

Upon completion of the subject student shall be able to (Know, do, appreciate) –

a. monitor drug therapy of patient through medication chart review and clinical review;
b. obtain medication history interview and counsel the patients;
c. identify and resolve drug related problems;
d. detect, assess and monitor adverse drug reaction;
e. interpret selected laboratory results (as monitoring parameters in therapeutics) of specific disease states; and
f. retrieve, analyse, interpret and formulate drug or medicine information.

Text books (Theory)

a. Practice Standards and Definitions - The Society of Hospital Pharmacists of Australia.
b. Basic skills in interpreting laboratory data - Scott LT, American Society of Health System Pharmacists Inc.
c. Biopharmaceutics and Applied Pharmacokinetics - Leon Shargel, Prentice Hall publication.
d. A text book of Clinical Pharmacy Practice; Essential concepts and skills, Dr.G.Parthasarathi etal, Orient Orient Langram Pvt.Ltd. ISSBN8125026

References

a. Australian drug information -Procedure manual. The Society of Hospital Pharmacists of Australia.
b. Clinical Pharmacokinetics - Rowland and Tozer, Williams and Wilkins Publication.
c. Pharmaceutical statistics. Practical and clinical applications. Sanford Bolton, Marcel Dekker, Inc.

2. Detailed syllabus and lecture wise schedule:

Title of the topic

1. **Definitions, development and scope of clinical pharmacy**
2. **Introduction to daily activities of a clinical pharmacist**
   a. Drug therapy monitoring (medication chart review, clinical review, pharmacist interventions)
   b. Ward round participation
   c. Adverse drug reaction management
   d. Drug information and poisons information
   e. Medication history
   f. Patient counseling
   g. Drug utilisation evaluation (DUE) and review (DUR)
   h. Quality assurance of clinical pharmacy services

3. **Patient data analysis**
   The patient's case history, its structure and use in evaluation of drug therapy & Understanding common medical abbreviations and terminologies used in clinical practices.
4. **Clinical laboratory tests used in the evaluation of disease states, and interpretation of test results**
   a. Haematological, Liver function, Renal function, thyroid function tests
   b. Tests associated with cardiac disorders
   c. Fluid and electrolyte balance
   d. Microbiological culture sensitivity tests
   e. Pulmonary Function Tests
5. **Drug & Poison information**
   a. Introduction to drug information resources available
   b. Systematic approach in answering DI queries
   c. Critical evaluation of drug information and literature
   d. Preparation of written and verbal reports
   e. Establishing a Drug Information Centre
   f. Poisons information- organization & information resources
6. **Pharmacovigilance**
   a. Scope, definition and aims of pharmacovigilance
   b. Adverse drug reactions - Classification, mechanism, predisposing factors, causality assessment [different scales used]
   c. Reporting, evaluation, monitoring, preventing & management of ADRs
   d. Role of pharmacist in management of ADR.
7. Communication skills, including patient counselling techniques, medication history interview, presentation of cases.
8. Pharmaceutical care concepts
9. Critical evaluation of biomedical literature
10. Medication errors

4.3 CLINICAL PHARMACY (PRACTICAL)

Practical : 3 Hrs./Week

Students are expected to perform 15 practicals in the following areas covering the topics dealt in theory class.

a. Answering drug information questions (4 Nos)
b. Patient medication counselling (4 Nos)
c. Case studies related to laboratory investigations (4 Nos)
d. Patient medication history interview (3 Nos)

Assignment:

Students are expected to submit THREE written assignments (1500 – 2000 words) on the topics given to them covering the following areas dealt in theory class.

Drug information, Patient medication history interview, Patient medication counselling, Critical appraisal of recently published articles in the biomedical literature which deals with a drug or therapeutic issue.

Format of the assignment:

1. Minimum & Maximum number of pages.
2. Reference(s) shall be included at the end.
3. Assignment can be a combined presentation at the end of the academic year.
4. It shall be computer draft copy.
5. Name and signature of the student.
6. Time allocated for presentation may be 8+2 Min.

4.4 BIOSTATISTICS AND RESEARCH METHODOLOGY (THEORY)

Theory : 2 Hrs. /Week

1. Detailed syllabus and lecture wise schedule

1 **Research Methodology**

a) Types of clinical study designs:
Case studies, observational studies, interventional studies,

b) Designing the methodology

c) Sample size determination and Power of a study
Determination of sample size for simple comparative experiments, determination of sample size to obtain a confidence interval of specified width, power of a study

d) Report writing and presentation of data

2 **Biostatistics**

2.1 a) Introduction

b) Types of data distribution

c) Measures describing the central tendency distributions- average, median, mode

d) Measurement of the spread of data-range, variation of mean, standard deviation, variance, coefficient of variation, standard error of mean.

2.2 **Data graphics**

Construction and labeling of graphs, histogram, piecharts, scatter plots, semilogarthimic plots

2.3 **Basics of testing hypothesis**

a) Null hypothesis, level of significance, power of test, P value, statistical estimation of confidence intervals.

b) Level of significance (Parametric data)- students t test (paired and unpaired), chi Square test, Analysis of Variance (one-way and two-way)

c) Level of significance (Non-parametric data)- Sign test, Wilcoxan's signed rank test, Wilcoxan rank sum test, Mann Whitney U test, Kruskal-Wall is test (one way ANOVA)

d) Linear regression and correlation- Introduction, Pearsonn's and Spearmann's correlation and correlation co-efficient.

e) Introduction to statistical software: SPSS, Epi Info, SAS.

2.4 **Statistical methods in epidemiology**

Incidence and prevalence, relative risk, attributable risk

3. Computer applications in pharmacy

Computer System in Hospital Pharmacy: Patterns of Computer use in Hospital Pharmacy – Patient record database management, Medication order entry – Drug labels and list – Intravenous solution and admixture, patient medication profiles, Inventory control, Management report & Statistics.

Computer In Community Pharmacy

Computerizing the Prescription Dispensing process

Use of Computers for Pharmaceutical Care in community pharmacy

Accounting and General ledger system

Drug Information Retrieval & Storage :

Introduction – Advantages of Computerized Literature Retrieval

Use of Computerized Retrieval

Reference books:

a. Pharmaceutical statistics- practical and clinical applications, Sanford Bolton 3rd edition, publisher Marcel Dekker Inc. NewYork.

b. Drug Information- A Guide for Pharmacists, Patrick M Malone, Karen L Kier, John E Stanovich , 3rd edition, McGraw Hill Publications 2006

4.5 BIOPHARMACEUTICS AND PHARMACOKINETICS (THEORY)

Theory : 3 Hrs. /Week

1. Biopharmaceutics

1. Introduction to Biopharmaceutics
   a. Absorption of drugs from gastrointestinal tract.
   b. Drug Distribution.
   c. Drug Elimination.

2. Pharmacokinetics

2. Introduction to Pharmacokinetics.
   a. Mathematical model
   b. Drug levels in blood.
   c. Pharmacokinetic model
   d. Compartment models
   e. Pharmacokinetic study.

3. One compartment open model.
   a. Intravenous Injection (Bolus)
   b. Intravenous infusion.

4. Multicompartment models.
   a. Two compartment open model.
   b. IV bolus, IV infusion and oral administration

5. Multiple – Dosage Regimens.
   a. Repititive Intravenous injections – One Compartment Open Model
   b. Repititive Extravascular dosing – One Compartment Open model
   c. Multiple Dose Regimen – Two Compartment Open Model

6. Nonlinear Pharmacokinetics.
   a. Introduction
   b. Factors causing Non-linearity.
   c. Michaelis-menton method of estimating parameters.

7. Noncompartmental Pharmacokinetics.
   a. Statistical Moment Theory.
   b. MRT for various compartment models.
   c. Physiological Pharmacokinetic model.

8. Bioavailability and Bioequivalence.
   a. Introduction.
   b. Bioavailability study protocol.
   c. Methods of Assessment of Bioavailability

4.5 BIOPHARMACEUTICS AND PHARMACOKINETICS (PRACTICAL)

Practical : 3 Hrs./Week

1. Improvement of dissolution characteristics of slightly soluble drugs by some methods.
2. Comparison of dissolution studies of two different marketed products of same drug.
3. Influence of polymorphism on solubility and dissolution.
4. Protein binding studies of a highly protein bound drug and poorly protein bound drug.
5. Extent of plasma-protein binding studies on the same drug (i.e. highly and poorly protein bound drug) at different concentrations in respect of constant time.
6. Bioavailability studies of some commonly used drugs on animal/human model.
7. Calculation of Ka, Ke, $t_1/2$, Cmax, AUC, AUMC, MRT etc. from blood profile data.
8. Calculation of bioavailability from urinary excretion data for two drugs.
9. Calculation of AUC and bioequivalence from the given data for two drugs.
10. In vitro absorption studies.
11. Bioequivalency studies on the different drugs marketed.(eg) Tetracycline, Sulphamethoxzole, Trimethoprim, Aspirin etc., on animals and human volunteers.
12. Absorption studies in animal inverted intestine using various drugs.
13. Effect on contact time on the plasma protein binding of drugs.
14. Studying metabolic pathways for different drugs based on elimination kinetics data.
15. Calculation of elimination half-life for different drugs by using urinary elimination data and blood level data.
16. Determination of renal clearance.

References:

a. Biopharmaceutics and Clinical Pharmacokinetics by, Milo Gibaldi
b. Remington's Pharmaceutical Sciences, By Mack Publishing Company, Pennsylvnia.
c. Pharmacokinetics: By Milo Glbaldi Donald, R. Mercel Dekker Inc.
d. Hand Book of Clinical Pharmacokinetics, By Milo Gibaldi and Laurie Prescott by ADIS Health Science Press.
e. Biopharmaceutics and Pharmacokinetics; By Robert F Notari
f. Biopharmaceutics; By Swarbrick
g. Bio pharmaceutics and Pharmacokinetics-A Treatise, By D. M. Brahmankar and Sunil B.Jaiswal, Vallabh Prakashan Pitampura, Delhi
h. Cilincal Pharmacokinetics, Concepts and Applications: By Malcolm Rowland and Thomas, N. Tozen, Lea and Febrger, Philadelphia, 1995.
i. Dissolution, Bioavailability and Bioequivalence, By Abdou H.M, Mack, Publishing Company, Pennsylvania 1989.
j. Biopharmaceutics and Clinical Pharmacokinetics-An introduction 4th edition Revised and expanded by Rebort F Notari Marcel Dekker Inn, New York and Basel, 1987.
k. Encyclopedia of Pharmaceutical Technology, Vol 13, James Swarbrick, James, C. Roylan, Marcel Dekker Inc, New York 1996.

4.6 CLINICAL TOXICOLOGY (THEORY)

Theory : 2 Hrs. /Week

1. General principles involved in the management of poisoning
2. Antidotes and the clinical applications.
3. Supportive care in clinical Toxicology.
4. Gut Decontamination.
5. Elimination Enhancement.
6. Toxicokinetics.
7. Clinical symptoms and management of acute poisoning with the following agents –
   a) Pesticide poisoning: organophosphorous compounds, carbamates, organochlorines, pyrethroids.
   b) Opiates overdose.
   c) Antidepressants
   d) Barbiturates and benzodiazepines.
   e) Alcohol: ethanol, methanol.
   f) Paracetamol and salicylates.
   g) Non-steroidal anti-inflammatory drugs.
   h) Hydrocarbons: Petroleum products and PEG.
   i) Caustics: inorganic acids and alkali.
   j) Radiation poisoning
8. Clinical symptoms and management of chronic poisoning with the following agents – Heavy metals: Arsenic, lead, mercury, iron, copper
9. Venomous snake bites: Families of venomous snakes, clinical effects of venoms, general management as first aid, early manifestations, complications and snake bite injuries.
10. Plants poisoning. Mushrooms, Mycotoxins.
11. Food poisonings
12. Envenomations – Arthropod bites and stings.

Substance abuse:

Signs and symptoms of substance abuse and treatment of dependence

a) CNS stimulants :amphetamine
b) Opioids
c) CNS depressants
d) Hallucinogens: LSD
e) Cannabis group
f) Tobacco

References:

a. Matthew J Ellenhorn. ELLENHORNS MEDICAL TOXICOLOGY – DIAGNOSIS AND TREATMENT OF POISONING. Second edition. Williams and Willkins publication, London
b. V V Pillay. HANDBOOK OF FORENSIC MEDICINE AND TOXICOLOGY. Thirteenth edition 2003 Paras Publication, Hyderabad

Fifth year

5.1 CLINICAL RESEARCH (THEORY)

Theory : 3 Hrs. /Week

1. **Drug development process:**

   Introduction

   Various Approaches to drug discovery

   1. Pharmacological
   2. Toxicological
   3. IND Application
   4. Drug characterization
   5. Dosage form

2. **Clinical development of drug:**

   1. Introduction to Clinical trials
   2. Various phases of clinical trial.
   3. Methods of post marketing surveillance
   4. Abbreviated New Drug Application submission.
   5. Good Clinical Practice – ICH, GCP, Central drug standard control organisation (CDSCO) guidelines
   6. Challenges in the implementation of guidelines
   7. Ethical guidelines in Clinical Research
   8. Composition, responsibilities, procedures of IRB / IEC
   9. Overview of regulatory environment in USA, Europe and India.
   10. Role and responsibilities of clinical trial personnel as per ICH GCP
       a. Sponsor
       b. Investigators
       c. Clinical research associate
       d. Auditors
       e. Contract research coordinators
       f. Regulatory authority
   11. Designing of clinical study documents (protocol, CRF, ICF, PIC with assignment)
   12. Informed consent Process
   13. Data management and its components
   14. Safety monitoring in clinical trials.

References :

a. Central Drugs Standard Control Organization. Good Clinical Practices-Guidelines for Clinical Trials on Pharmaceutical Products in India. New Delhi: Ministry of Health; 2001.

b. International Conference on Harmonisation of Technical requirements for registration of Pharmaceuticals for human use. ICH Harmonised Tripartite Guideline. Guideline for Good Clinical Practice.E6; May 1996.

c. Ethical Guidelines for Biomedical Research on Human Subjects 2000. Indian Council of Medical Research, New Delhi.

d. Textbook of Clinical Trials edited by David Machin, Simon Day and Sylvan Green, March 2005, John Wiley and Sons.

e. Principles of Clinical Research edited by Giovanna di Ignazio, Di Giovanna and Haynes.

f. Clinical Data Management edited by R K Rondels, S A Varley, C F Webbs. Second Edition, Jan 2000, Wiley Publications.

g. Goodman & Gilman: JG Hardman, LE Limbard, 10th Edn. McGraw Hill Publications, 2001.

5.2 PHARMACOEPIDEMIOLOGY AND PHARMACOECONOMICS (THEORY)

Theory : 3 Hrs. /Week

1. Pharmacoepidemiology :

Definition and scope:
Origin and evaluation of pharmacoepidemiology need for pharmacoepidemiology, aims and applications.

Measurement of outcomes in pharmacoepidemiology
Outcome measure and drug use measures
Prevalence, incidence and incidence rate. Monetary units, number of prescriptions, units of drugs dispensed, defined daily doses and prescribed daily doses, medication adherence measurement

Concept of risk in pharmacoepidemiology
Measurement of risk, attributable risk and relative risk, time-risk relationship and odds ratio

Pharmacoepidemiological methods
Includes theoretical aspects of various methods and practical study of various methods with the help of case studies for individual methods
Drug utilization review, case reports, case series, surveys of drug use, cross – sectional studies, cohort studies, case control studies, case –cohort studies, meta – analysis studies, spontaneous reporting, prescription event monitoring and record linkage system.

Sources of data for pharmacoepidemiological studies
Ad Hoc data sources and automated data systems.

Selected special applications of pharmacoepidemiology
Studies of vaccine safety, hospital pharmacoepidemiology, pharmacoepidemiology and risk management, drug induced birth defects.

2. Phrmacoeconomics:

Definition, history, needs of pharmacoeconomic evaluations

Role in formulary management decisions

Pharmacoeconomic evaluation
Outcome assessment and types of evaluation
Includes theoretical aspects of various methods and practical study of various methods with the help of case studies for individual methods:
Cost – minimization, cost- benefit, cost – effectiveness, cost utility

3. Applications of Pharmacoeconomics

Software and case studies

5.3 CLINICAL PHARMACOKINETICS AND PHARMACOTHERAPEUTIC DRUG MONITORING (THEORY)

Theory : 2 Hrs. /Week

1. **Introduction to Clinical pharmacokinetics.**

2. **Design of dosage regimens:**
   Nomograms and Tabulations in designing dosage regimen, Conversion from intravenous to oral dosing, Determination of dose and dosing intervals, Drug dosing in the elderly and pediatrics and obese patients.

3. **Pharmacokinetics of Drug Interaction:**
   a. Pharmacokinetic drug interactions
   b. Inhibition and Induction of Drug metabolism
   c. Inhibition of Biliary Excretion.

4. **Therapeutic Drug monitoring:**
   a. Introduction
   b. Individualization of drug dosage regimen (Variability – Genetic, Age and Weight , disease, Interacting drugs).
   c. Indications for TDM. Protocol for TDM.
   d. Pharmacokinetic/Pharmacodynamic Correlation in drug therapy.
   e. TDM of drugs used in the following disease conditions: cardiovascular disease, Seizure disorders, Psychiatric conditions, and Organ transplantations.

5. **Dosage adjustment in Renal and hepatic Disease.**
   a. Renal impairment
   b. Pharmacokinetic considerations
   c. General approach for dosage adjustment in Renal disease.
   d. Measurement of Glomerular Filtration rate and creatinine clearance.
   e. Dosage adjustment for uremic patients.
   f. Extracorporeal removal of drugs.
   g. Effect of Hepatic disease on pharmacokinetics.

6. **Population Pharmacokinetics.**
   a. Introduction to Bayesian Theory.
   b. Adaptive method or Dosing with feed back.
   c. Analysis of Population pharmacokinetic Data.

7. **Pharmacogenetics**
   a. Genetic polymorphism in Drug metabolism: Cytochrome P-450 Isoenzymes.
   b. Genetic Polymorphism in Drug Transport and Drug Targets.
   c. Pharmacogenetics and Pharmacokinetics/Pharmacodynamic considerations

APPENDIX-B

(See regulation 9)

CONDITIONS TO BE FULFILLED BY THE ACADEMIC TRAINING INSTITUTION

1) Any authority or institution in India applying to the Pharmacy Council of India for approval of courses of study for Pharm.D. and Pharm.D. (Post Baccalaureate) under sub-section (1) of section 12 of the Pharmacy Act, 1948 shall comply with the infrastructural facilities as prescribed by the Pharmacy Council of India from time to time.

2) Pharm.D. and Pharm.D. (Post Baccalaureate) programmes shall be conducted only in those institutions which -
   a) are approved by the Pharmacy Council of India for B.Pharm course as provided under section 12 of the Pharmacy Act, 1948;
   b) have 300 bedded hospital attached to it.

(i) Hospital Details

1. Institution with their own hospital of minimum 300 beds.
2. Teaching hospital recognised by the Medical Council of India or University, or a Government hospital not below the level of district headquarter hospital with 300 beds with clearly defined Memorandum of Understanding including housing pharmacy practice department with minimum carpet area of 30 square feet per student along with consent to provide the professional manpower to support the programme.
3. Corporate type hospital with minimum 300 beds with clearly defined Memorandum of Understanding including housing pharmacy practice department with minimum carpet area of 30 square feet per student along with consent to provide the professional manpower to support the programme.
4. Number of institutions which can be attached to one hospital shall be restricted by the student pharmacist to bed ratio of 1:10.

(ii) Speciality

a) Tertiary care hospitals are desirable
b) Medicine[compulsory], and any three specialization of the following
   1. Surgery
   2. Pediatrics
   3. Gynecology and obstetrics
   4. Psychiatry
   5. Skin and VD
   6. Orthopedics

(iii)Location of the Hospital

Within the same limits of Corporation or Municipality or Campus with Medical Faculty involvement as adjunct faculty.

3) TEACHING STAFF REQUIREMENT

i) Staff Pattern : All faculty shall be full time. However part time perceptors in hospital shall be allowed.

ii) Subject wise specialisation of the Teaching Staff :

S.No.	Subject	Specialisation required
1.	Pharmacy Practice	M.Pharm in Pharmacy Practice or Pharmacology or Pharmaceutics.
2.	Human Anatomy & Physiology	M.Pharm in Pharmacology or Pharmacy practice
3.	Pharmaceutics (Dispensing & General Pharmacy)	M.Pharm in Pharmaceutics
4.	Pharmacognosy-I	M.Pharm in Pharmacognosy
5.	Pharmaceutical Organic Chemistry-I	M.Pharm in Pharmaceutical chemistry or Pharmaceutical Analysis or Quality assurance or Bulk Drug
6.	Pharmaceutical Inorganic Chemistry	M.Pharm in Pharmaceutical chemistry or Pharmaceutical Analysis or Quality assurance or Bulk Drug
7.	Pharmaceutical microbiology	M.Pharm in Pharmaceutics or Pharmaceutical Biotechnology
8.	Pathophysiology	M.Pharm Pharmacy practice or Pharmacology
9.	Applied Biochemistry & Clinical Chemistry	M.Pharm in Pharmacology or Pharmacy practice or Pharmaceutical chemistry
10.	Pharmacology-I	M.Pharm in Pharmacology or Pharmacy practice
11.	Pharmaceutical Jurisprudence	M.Pharm in Pharmaceutics
12.	Pharmacology-II	M.Pharm in Pharmacology or Pharmacy practice
13.	Pharmaceutical Dosage Forms	M.Pharm in Pharmaceutics or Industrial Pharmacy
14.	Pharmacotherapeutics –I, II and III	M.Pharm Pharmacy practice or Pharmacology
15.	Community Pharmacy	M.Pharm in Pharmacy practice or Pharmacology or Pharmaceutics
16.	Hospital Pharmacy	M.Pharm in Pharmacy practice or Pharmacology or Pharmaceutics
17.	Clinical Pharmacy	M.Pharm in Pharmacy practice
18.	Computer Science or Computer Application in pharmacy	MCA
19.	Mathematics	M.Sc. (Maths)

iii) Teaching Staff :

Department/Division	Name of the post	No.
Department of Pharmaceutics	Professor	1
	Asst. Professor	1
	Lecturer	2
Department of Pharmaceutical Chemistry (Including Pharmaceutical Analysis)	Professor	1
	Asst. Professor	1
	Lecturer	3
Department of Pharmacology	Professor	1
	Asst. Professor	1
	Lecturer	2
Department of Pharmacognosy	Professor	1
	Asst. Professor	1
	Lecturer	1
Department of Pharmacy Practice	Professor	1
	Asst. Professor	2
	Lecturer	3

iv) Prescribed qualifications and experience for Professor, Assistant Professor, Lecturer and others :

Sl. No.	CADRE	QUALIFICATIONS	EXPERIENCE
1.	Lecturer	i) Basic degree in pharmacy (B.Pharm). ii) Registration as a pharmacist under the Pharmacy Act. iii) First Class Master's degree in appropriate branch of specialization in Pharmacy (M.Pharm)	No minimum requirement.
2.	Assistant Professor	i) Basic degree in pharmacy (B.Pharm). ii) Registration as a pharmacist under the Pharmacy Act. iii) Master's degree in appropriate branch of specialization in Pharmacy (M.Pharm)	Three years experience in Teaching or Research at the level of Lecturer or equivalent.

		iv) Ph.D. degree (with First Class degree either at Bachelor's or Master's level) in the appropriate branch of specialization in Pharmacy.	
3.	Professor	i) Basic degree in pharmacy (B.Pharm). ii) Registration as a pharmacist under the Pharmacy Act. iii) Master's degree in appropriate branch of specialization in Pharmacy (M.Pharm). iv) Ph.D. degree (with first Class either at Bachelor's or Master's level) in appropriate branch of specialization in Pharmacy.	i) Ten years experience in Teaching or Research. ii) Out of which five years must be as Assistant Professor.
4.	Director or Principal or Head of institute	i) Basic degree in pharmacy (B.Pharm). ii) Registration as a pharmacist under the Pharmacy Act. iii) Master's degree in appropriate branch of specialization in Pharmacy (M.Pharm) iv) Ph.D. degree (with first Class degree either at Bachelor's or Master's level in the appropriate branch of specialization in Pharmacy.	i) Fifteen years experience in Teaching or Research. ii) Out of which five years must be as Professor or above in Pharmacy. Desirable : Administrative experience in responsible position. The maximum age for holding the post shall be 65 years.

Note : If a class or division is not awarded at Master's level, a minimum of 60% marks in aggregate or equivalent cumulative grade point average shall be considered equivalent to first class or division, as the case may be.

v) Workload of Faculty :

Professor – 8 hrs. per week

Assistant Professor – 12 hrs. per week

Lecturers – 16 hrs. per week

vi) Training of Pharmacy Practice Faculty :

a) Teaching staff will be trained as per the module prescribed by the Central Council.

b) Duration of training – Minimum 3 months.

c) Training sites – Institutions running pharmacy practice or Programmes for atleast five years.

d) Trainer – Professor or Assistant Professor with minimum of five years of clinical pharmacy teaching and practice experience.

4) NON-TEACHING STAFF :

Sl.No.	Designation	Required (Minimum)	Required Qualification
1	Laboratory Technician	1 for each Dept	D. Pharm
2	Laboratory Assistants or Laboratory Attenders	1 for each Lab (minimum)	SSLC
3	Office Superintendent	1	Degree
4	Accountant	1	Degree
5	Store keeper	1	D.Pharm or a Bachelor degree recognized by a University or institution.
6	Computer Data Operator	1	BCA or Graduate with Computer Course
7	Office Staff I	1	Degree
8	Office Staff II	2	Degree
9	Peon	2	SSLC
10	Cleaning personnel	Adequate	---
11	Gardener	Adequate	---

5) ACCOMMODATION :

Suitable and sufficient accommodation with adequate ventilation, lighting and other hygienic conditions should be provided to the rooms for Principal or the Head of the department, office, class rooms, library, staff, staff common room, students common room, museum, laboratories, stores, etc.

At least two lecture halls alongwith eight laboratories as specified below should be provided for: —

1. Pharmaceutics and Pharmacokinetics Lab - 2
2. Life Science (Pharmacology, Physiology, Pathophysiology) - 2
3. Phytochemistry or Pharmaceutical Chemistry - 2
4. Pharmacy Practice - 2

Total = 8

In addition to the laboratories, balance room, aseptic room or cabinet, animal house and a machine room shall also be provided.

Floor area of the laboratory should not be less than 30 square feet per student required to work in the laboratory at any given time subject to a minimum of 750 square feet.

Laboratories should be fitted and constructed in a manner that these can be kept reasonably clean. Gas and water fittings, shelves, fuming cupboards be provided wherever necessary.

6. EQUIPMENT AND APPARATUS :

Department wise list of minimum equipments

A. DEPARTMENT OF PHARMACOLOGY :

I. Equipment:

S.No.	Name	Minimum required Nos.
1	Microscopes	15
2	Haemocytometer with Micropipettes	20
3	Sahli's haemocytometer	20
4	Hutchinson's spirometer	01
5	Spygmomanometer	05
6	Stethoscope	05
7	Permanent Slides for various tissues	One pair of each tissue Organs and endocrine glands One slide of each organ system
8	Models for various organs	One model of each organ system
9	Specimen for various organs and systems	One model for each organ system
10	Skeleton and bones	One set of skeleton and one spare bone

11	Different Contraceptive Devices and Models	One set of each device
12	Muscle electrodes	01
13	Lucas moist chamber	01
14	Myographic lever	01
15	Stimulator	01
16	Centrifuge	01
17	Digital Balance	01
18	Physical /Chemical Balance	01
19	Sherrington's Kymograph Machine or Polyrite	10
20	Sherrington Drum	10
21	Perspex bath assembly (single unit)	10
22	Aerators	10
23	Computer with LCD	01
24	Software packages for experiment	01
25	Standard graphs of various drugs	Adequate number
26	Actophotometer	01
27	Rotarod	01
28	Pole climbing apparatus	01
29	Analgesiometer (Eddy's hot plate and radiant heat methods)	01
30	Convulsiometer	01
31	Plethysmograph	01
32	Digital pH meter	01

II. Apparatus:

S.No	Name	Minimum required Nos.
1	Folin-Wu tubes	60
2	Dissection Tray and Boards	10
3	Haemostatic artery forceps	10
4	Hypodermic syringes and needles of size 15,24,26G	10
5	Levers, cannulae	20

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

B. DEPARTMENT OF PHARMACOGNOSY :

I. Equipment:

S.No.	Name	Minimum required Nos.
1	Microscope with stage micrometer	15
2	Digital Balance	02
3	Autoclave	02

4	Hot air oven	02
5	B.O.D.incubator	01
6	Refrigerator	01
7	Laminar air flow	01
8	Colony counter	02
9	Zone reader	01
10	Digital pH meter	01
11	Sterility testing unit	01
12	Camera Lucida	15
13	Eye piece micrometer	15
14	Incinerator	01
15	Moisture balance	01
16	Heating mantle	15
17	Flourimeter	01
18	Vacuum pump	02
19	Micropipettes (Single and multi channeled)	02
20	Micro Centrifuge	01
21	Projection Microscope	01

II. Apparatus:

S.No.	Name	Minimum required Nos.
1	Reflux flask with condenser	20
2	Water bath	20
3	Clavengers apparatus	10
4	Soxhlet apparatus	10
6	TLC chamber and sprayer	10
7	Distillation unit	01

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

C. DEPARTMENT OF PHARMACEUTICAL CHEMISTRY :

I. Equipment:

S.No.	Name	Minimum required Nos.
1	Hot plates	05
2	Oven	03
3	Refrigerator	01
4	Analytical Balances for demonstration	05
5	Digital balance 10mg sensitivity	10
6	Digital Balance (1mg sensitivity)	01
7	Suction pumps	06
8	Muffle Furnace	01

9	Mechanical Stirrers	10
10	Magnetic Stirrers with Thermostat	10
11	Vacuum Pump	01
12	Digital pH meter	01
13	Microwave Oven	02

II. Apparatus:

S.No.	Name	Minimum required Nos.
1	Distillation Unit	02
2	Reflux flask and condenser single necked	20
3	Reflux flask and condenser double/ triple necked	20
4	Burettes	40
5	Arsenic Limit Test Apparatus	20
6	Nesslers Cylinders	40

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

D. DEPARTMENT OF PHARMACEUTICS :

I. Equipment:

S.No	Name	Minimum required Nos.
1	Mechanical stirrers	10
2	Homogenizer	05
3	Digital balance	05
4	Microscopes	05
5	Stage and eye piece micrometers	05
6	Brookfield's viscometer	01
7	Tray dryer	01
8	Ball mill	01
9	Sieve shaker with sieve set	01
10	Double cone blender	01
11	Propeller type mechanical agitator	05
12	Autoclave	01
13	Steam distillation still	01
14	Vacuum Pump	01
15	Standard sieves, sieve no. 8, 10, 12,22,24, 44, 66, 80	10 sets
16	Tablet punching machine	01
17	Capsule filling machine	01
18	Ampoule washing machine	01
19	Ampoule filling and sealing machine	01

20	Tablet disintegration test apparatus IP	01
21	Tablet dissolution test apparatus IP	01
22	Monsanto's hardness tester	01
23	Pfizer type hardness tester	01
24	Friability test apparatus	01
25	Clarity test apparatus	01
26	Ointment filling machine	01
27	Collapsible tube crimping machine	01
28	Tablet coating pan	01
29	Magnetic stirrer, 500ml and 1 liter capacity with speed control	05 EACH 10
30	Digital pH meter	01
31	All purpose equipment with all accessories	01
32	Aseptic Cabinet	01
33	BOD Incubator	02
34	Bottle washing Machine	01
35	Bottle Sealing Machine	01
36	Bulk Density Apparatus	02
37	Conical Percolator (glass/copper/ stainless steel)	10
38	Capsule Counter	02
39	Energy meter	02
40	Hot Plate	02
41	Humidity Control Oven	01
42	Liquid Filling Machine	01
43	Mechanical stirrer with speed regulator	02
44	Precision Melting point Apparatus	01
45	Distillation Unit	01

II. Apparatus:

S.No	Name	Minimum required Nos.
1	Ostwald's viscometer	15
2	Stalagmometer	15
3	Desiccator*	05
4	Suppository moulds	20
5	Buchner Funnels (Small, medium, large)	05 each
6	Filtration assembly	01
7	Permeability Cups	05
8	Andreason's Pipette	03
9	Lipstick moulds	10

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

E. DEPARTMENT OF PHARMACEUTICAL BIOTECHNOLOGY :

S.No.	Name	Minimum required Nos.
1	Orbital shaker incubator	01
2	Lyophilizer (Desirable)	01
3	Gel Electrophoresis (Vertical and Horizontal)	01
4	Phase contrast/Trinocular Microscope	01
5	Refrigerated Centrifuge	01
6	Fermenters of different capacity (Desirable)	01
7	Tissue culture station	01
8	Laminar airflow unit	01
9	Diagnostic kits to identify infectious agents	01
10	Rheometer	01
11	Viscometer	01
12	Micropipettes (single and multi channeled)	01 each
13	Sonicator	01
14	Respinometer	01
15	BOD Incubator	01
16	Paper Electrophoresis Unit	01
17	Micro Centrifuge	01
18	Incubator water bath	01
19	Autoclave	01
20	Refrigerator	01
21	Filtration Assembly	01
22	Digital pH meter	01

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

F. DEPARTMENT OF PHARMACY PRACTICE :

Equipment:

S.No.	Name	Minimum required Nos.
1	Colorimeter	2
2	Microscope	Adequate
3	Permanent slides (skin, kidney, pancreas, smooth muscle, liver etc.,)	Adequate
4	Watch glass	Adequate
5	Centrifuge	1
6	Biochemical reagents for analysis of normal and pathological constituents in urine and blood facilities	Adequate
7	Filtration equipment	2
8	Filling Machine	1
9	Sealing Machine	1

10	Autoclave sterilizer	1
11	Membrane filter	1 Unit
12	Sintered glass funnel with complete filtering assemble	Adequate
13	Small disposable membrane filter for IV admixture filtration	Adequate
14	Laminar air flow bench	1
15	Vacuum pump	1
16	Oven	1
17	Surgical dressing	Adequate
18	Incubator	1
19	PH meter	1
20	Disintegration test apparatus	1
21	Hardness tester	1
22	Centrifuge	1
23	Magnetic stirrer	1
24	Thermostatic bath	1

NOTE:

1. **Computers and Internet connection (Broadband), six computers for students with internet and staff computers as required.**
2. **Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and the department.**

G. CENTRAL INSTRUMENTATION ROOM :

S.No.	Name	Minimum required Nos.
1	Colorimeter	01
2	Digital pH meter	01
3	UV- Visible Spectrophotometer	01
4	Flourimeter	01
5	Digital Balance (1mg sensitivity)	01
6	Nephelo Turbidity meter	01
7	Flame Photometer	01
8	Potentiometer	01
9	Conductivity meter	01
10	Fourier Transform Infra Red Spectrometer (Desirable)	01
11	HPLC	01
12	HPTLC (Desirable)	01
13	Atomic Absorption and Emission spectrophotometer (Desirable)	01
14	Biochemistry Analyzer (Desirable)	01
15	Carbon, Hydrogen, Nitrogen Analyzer (Desirable)	01
16	Deep Freezer (Desirable)	01
17	Ion- Exchanger	01
18	Lyophilizer (Desirable)	01

APPENDIX-C
(See regulation 16)
INTERNSHIP

1) **SPECIFIC OBJECTIVES :**

i) to provide patient care in cooperation with patients, prescribers, and other members of an interprofessional health care team based upon sound therapeutic principles and evidence-based data, taking into account relevant legal, ethical, social cultural, economic, and professional issues, emerging technologies, and evolving biomedical, pharmaceutical, social or behavioral or administrative, and clinical sciences that may impact therapeutic outcomes.

ii) to manage and use resources of the health care system, in cooperation with patients, prescribers, other health care providers, and administrative and supportive personnel, to promote health; to provide, assess, and coordinate safe, accurate, and time-sensitive medication distribution; and to improve therapeutic outcomes of medication use.

iii) to promote health improvement, wellness, and disease prevention in co-operation with patients, communities, at-risk population, and other members of an interprofessional team of health care providers.

iv) to demonstrate skills in monitoring of the National Health Programmes and schemes, oriented to provide preventive and promotive health care services to the community.

v) to develop leadership qualities to function effectively as a member of the health care team organised to deliver the health and family welfare services in existing socio-economic, political and cultural environment.

vi) to communicate effectively with patients and the community.

2) **OTHER DETAILS :**

i) All parts of the internship shall be done, as far as possible, in institutions in India. In case of any difficulties, the matter may be referred to the Pharmacy Council of India to be considered on merits.

ii) Where an intern is posted to district hospital for training, there shall be a committee consisting of representatives of the college or university, and the district hospital administration, who shall regulate the training of such trainee. For such trainee a certificate of satisfactory completion of training shall be obtained from the relevant administrative authorities which shall be countersigned by the Principal or Dean of College.

iii) Every candidate shall be required, after passing the final Pharm.D. or Pharm.D. (Post Baccalaureate) examination as the case may be to undergo compulsory rotational internship to the satisfaction of the College authorities and University concerned for a period of twelve months so as to be eligible for the award of the degree of Pharm.D. or Pharm.D. (Post Baccalaureate) as the case may be.

3. ASSESSMENT OF INTERNSHIP :

i) The intern shall maintain a record of work which is to be verified and certified by the preceptor (teacher practioner) under whom he works. Apart from scrutiny of the record of work, assessment and evaluation of training shall be undertaken by an objective approach using situation tests in knowledge, skills and attitude during and at the end of the training. Based on the record of work and date of evaluation, the Dean or Principal shall issue certificate of satisfactory completion of training, following which the university shall award the degree or declare him eligible for it.

ii) Satisfactory completion of internship shall be determined on the basis of the following:-

(1) Proficiency of knowledge required for each case management SCORE 0-5

(2) The competency in skills expected for providing Clinical Pharmacy Services SCORE 0-5

(3) Responsibility, punctuality, work up of case, involvement in patient care SCORE 0-5

(4) Ability to work in a team (Behavior with other healthcare professionals including medical doctors, nursing staff and colleagues). SCORE 0-5

(5) Initiative, participation in discussions, research aptitude. SCORE 0-5

Poor	Fair	Below Average	Average	Above Average	Excellent
0	1	2	3	4	5

A Score of less than 3 in any of above items will represent unsatisfactory completion of internship.

APPENDIX-D

(See regulation 17)

CONDITIONS TO BE FULFILLED BY THE EXAMINING AUTHORITY

1. The Examining Authority shall be a statutory Indian University constituted by the Central Government/State Government/Union Territory Administration. It shall ensure that discipline and decorum of the examinations are strictly observed at the examination centers.
2. It shall permit the Inspector or Inspectors of the Pharmacy Council of India to visit and inspect the examinations.
3. It shall provide:-
   (a) adequate rooms with necessary furniture for holding written examinations;
   (b) well-equipped laboratories for holding practical examinations;
   (c) an adequate number of qualified and responsible examiners and staff to conduct and invigilate the examinations; and
   (d) such other facilities as may be necessary for efficient and proper conduct of examinations.
4. It shall, if so required by a candidate, furnish the statement of marks secured by a candidate in the examinations after payment of prescribed fee, if any, to the Examining Authority.
5. It shall appoint examiners whose qualifications should be similar to those of the teachers in the respective subjects as shown in Appendix–B.
6. In pursuance of sub–section (3) of section 12 of the Pharmacy Act, 1948, the Examining Authority shall communicate to the Secretary, Pharmacy Council of India, not less than six weeks in advance the dates fixed for examinations, the time-table for such examinations, so as to enable the Council to arrange for inspection of the examinations.
7. The Examining Authority shall ensure that examiners for conducting examination for Pharm.D. and Pharm.D. (Post Baccalaureate) programmes shall be persons possessing pharmacy qualification and are actually involved in the teaching of the Pharm.D. and Pharm.D. (Post Baccalaureate) programmes in an approved institution.

(ARCHNA MUDGAL)
Registrar-cum-Secretary
Pharmacy Council of India
New Delhi – 110002

PHARMACY COUNCIL OF INDIA

Standard Inspection Format (S.I.F) for institutions conducting B. Pharm

(To be filled and submitted to PCI by an organization seeking approval of the course / continuation of the approval)

(SIF-B)

To be filled up by P.C.I. ***To be filled up by inspectors***

Inspection No. : **Date of Inspection:**

FILE No. : **NAME OF THE INSPECTORS: 1.**
(BLOCK LETTERS)
2.

PART – I
A - GENERAL INFORMATION

A – I .1 Name of the Institution: Complete Postal address: STD code Telephone No. Fax No. E-mail	
Year of starting of the course	
Status of the course conducting body: Government / University / Autonomous / Aided / Private (Enclose copy of Registration documents of Society/Trust)	
A – I .2 Name, address of the Society/Trust/ Management (attach documentary evidence) STD Code: Telephone No: Fax No: E-mail Web Site:	
A – I .3 Name, Designation and Address of person to be contacted by phone STD Code Telephone No Office Residence Mobile No. Fax No E-Mail	
A – I. 4 Name and Address of the Head of the Institution	
A – I. 4 a) Whether the Jan Aushadhi Medical Store has been opened by your institution	Yes / No (Please tick (✓) the relevant portion)

A –I . 5

FOR INSTITUTION SEEKING CONTINUATION OF APPROVAL

Signature of the Head of the Institution **Signature of the Inspectors**

a. Details of Affiliation Fee Paid

Name of the Course	Affiliation Fee paid up to	Receipt No	Dated	Remarks of the Inspectors
B. Pharm				

b. APPROVAL STATUS:

Name of the Course	Approved up to	In take Approved and Admitted	PCI	STATE GOVERNMENT	UNIVERSITY	Remarks of the Inspectors
B. Pharm		**Approval Letter No and Date**				
		Approved Intake				
		Actually Admitted				

c. STATUS OF APPLICATION

COURSES INSPECTED FOR					
Faculty / Subject	**Extension of Approval**		**Increase in Intake of Seats**		**Remarks** **Current Intake**
B. Pharm	**Yes**	**No**	**Yes**	**No**	

Note: Enclose relevant documents

A –I. 6

Whether other Educational Institutions/Courses are also being run by the Trust / Institution in the same

Building / campus? If Yes, Give Details

Yes ☐ No ☐

A – I. 6 a

Status of the Pharmacy Course:

Independent Building ☐

Wing of another college ☐

Separate Campus ☐

Multi Institutional Campus ☐

Examining Authority :
With complete postal Address, Telephone No. and STD Code.

Signature of the Head of the Institution **Signature of the Inspectors**

B - DETAILS OF THE INSTITUTION

B –I .1 **Name of the Principal**					
Qualification/ Experience	**Qualification***		**Teaching Experience Required**	**Actual experience**	**Remarks of the Inspectors**
	M. Pharm		15 years, out of which 5 years as Prof. / HOD		
	PhD		10 years, out of which at least 05 years as Asst. Prof		

*** Documentary evidence should be provided**

B –I .2

For institution seeking continuation of affiliation

Course	**Date of last Inspection**	**Remarks of the Previous Inspection Report**	**Complied / Not Complied**	**Intake reduced/Stopped in the last 03 years***
B. Pharm				

* Enclose Documents

B –I .3

Status of Governing Council:	**Government/Trust/Society/Individual / University**
Details of the Governing Body	**Enclosed / Not Enclosed**
Minutes of the last Governing council Meeting	**Enclosed / Not Enclosed**

B –I .4

Pay Scales:

Staff	**Scale of pay**	**PF**	**Gratuity**	**Pension benefit**	**Remarks of the Inspectors**
Teaching Staff	**AICTE /UGC/State Govt.** Yes / No	Yes / No	Yes / No	Yes / No	
Non-Teaching Staff	**State Government** Yes / No	Yes / No	Yes / No	Yes / No	

B –I .5

B. Pharm Course: Admission Statement for the Past Three Years

ACADEMIC YEAR	**Year 200-**	**Year 200-**	**Year 200-**
Sanctioned			
No. of Admissions			
Unfilled Seats			
No. of Excess Admissions			

Signature of the Head of the Institution **Signature of the Inspectors**

B –I .6

Academic information: Percentage of UG results for the past three years based on University Calendar

ACADEMIC YEAR	Year 200-	Year 200-	Year 200-
1st year			
2nd year			
3rd year			
Final year			
Pass % (Final Year)			

B – II

Co – Curricular Activities / Sports Activities

Whether college has NSS Unit (Yes/No)? If no give reasons	
NSS Programme Officer's Name	
Programme conducted (mention details)	
Whether students participating in University level cultural activities / Co- curricular/sports activities	Yes/No
Physical Instructor	Available / Not available
Sports Ground	Individual / Shared

Signature of the Head of the Institution **Signature of the Inspectors**

C - FINANCIAL STATUS OF THE INSTITUTION

Audited financial Statement of Institute should be furnished

C .1 Resources and funding agencies (give complete list)

C .2 Please provide following Information

Receipts			Expenditure			Remarks of the Inspectors
Sl. No.	Particulars	Amount	Sl. No.	Particulars	Amount	
1.	Grants a. Government b. Others		CAPITAL EXPENDITURE			
2.	Tuition Fee		1.	Building		
3.	Library Fee		2.	Equipment		
4.	Sports Fee		3.	Others		
5.	Union Fee		REVENUE EXPENDIUTRE			
6.	Others		1	Salary		
			2.	MAINTENANCE EXPENDITURE		
				i College		
				ii Others		
			3.	University Fee (If any)		
			4.	Apex Bodies Fee		
			5.	Government Fee		
			6.	Deposit held by the College		
Total			7.	Others		
			8.	Misc.Expenditure		
			Total			

Note: Enclose relevant documents

Signature of the Head of the Institution **Signature of the Inspectors**

PART- II PHYSICAL INFRASTRUCTURE

1. a. Availability of Land (B. Pharm courses) : **Available / Not Available**

a) 2.5 acres District HQ/Corporation/Municipality limit

b) 0.5 acre for City / Metros

b. Building : **Own/Rented/Leased**

c. Land Details to be in name of Trust and Society
Records to be enclosed
Sale deed : **Enclosed/Not available**

d. Building†:

i) Approved Building plan, to be Enclosed : **Enclosed/Not available**

e. Total Built Area of the college building in Sq.mts : Built up Area

Amenities and Circulation Area

2. Class rooms:

Total Number of Class rooms provided at the end of 4 Year Course

Class	Required Nos	Available Nos	Required Area * for each class room	Available Area in Sq.mts	Remarks of the Inspectors
B. Pharm	04		90 Sq. mts each (Desirable) 75 Sq. mts each (Essential)		

(*To accommodate 60 students).

3. Laboratory requirement at the end of 4 Years

Sl. No.	Infrastructure for	Requirement as per Norms	Available No. & Area in Sq mts	Remarks/ Deficiency
1	Laboratory Area for B.Pharm Course (12 Labs)	90 Sq .mts x n (n=10) - Including Preparation room - Desirable 75 Sq. mts - Essential		
2	Pharmaceutics Pharmaceutical Chemistry Pharmaceutical Analysis Pharmacology Pharmacognosy Pharmaceutical Biotechnology (Including Aseptic Room) Total no. Laboratories for B.Pharm course	03 Laboratories 02 Laboratories 01 Laboratory 02 Laboratories 01 Laboratories 01 Laboratory 10 Laboratories *		
3	Preparation Room for each lab (One room can be shared by two labs, if it is in between two labs)	10 sq mts (minimum)		
4	Area of the Machine Room	80-100 Sq.mts		
5	Central Instrumentation Room	80 Sq.mts with A/ C		
6	Store Room – I	1 (Area 100 Sq mts)		
7	Store Room - II (For Inflammable chemicals)	1 (Area 20 Sq mts)		

***Number of laboratories required for entire course of 4 years.**

Signature of the Head of the Institution **Signature of the Inspectors**

† **The Institutions will not be permitted to run the courses in rented building on or after 31.12.2008**

1. All the Laboratories should be well lit & ventilated
2. All Laboratories should be provided with basic amenities and services like exhaust fans and fume chamber to reduce the pollution wherever necessary.
3. The work benches should be smooth and easily cleanable preferably made of non-absorbent material.
4. The water taps should be non-leaking and directly installed on sinks. Drainage should be efficient.
5. Balance room should be attached to the concerned laboratories.

4. Administration Area:

Sl.No.	Name of infrastructure	Requirement as per Norms in number	Requirement as per Norms, in area	Available		Remarks/ Deficiency
				No.	Area in Sq .mts	
1	Principal's Chamber	01	30 Sq .mts			
2	Office – I - Establishment	01	60 Sq. mts			
3	Office – II - Academics					
4	Confidential Room					

5. Staff Facilities:

Sl. No.	Name of infrastructure	Requirement as per Norms in number	Requirement as per Norms, in area	Available		Remarks/ Deficiency
				No.	Area in Sq mts	
1	HODs for B.Pharm Course	Minimum 4	20 Sq mts x 4			
2	Faculty Rooms for B.Pharm course		10 Sq mts x n (n=No of teachers)			

6. Museum, Library, Animal House and other Facilities

Sl.No.	Name of infrastructure	Requirement as per Norms in number	Requirement as per Norms, in area	Available		Remarks/ Deficiency
				No.	Area in Sq. mts	
1	Animal House	01	80 Sq mts			
2	Library	01	150 Sq mts			
3	Museum	01	50 Sq mts (May be attached to the Pharmacognosy lab)			
4	Auditorium / Multi Purpose Hall (Desirable)	01	250 – 300 seating capacity			
5	Seminar Hall	01				
6	Herbal Garden (Desirable)	01	Adequate Number of Medicinal Plants			

Signature of the Head of the Institution **Signature of the Inspectors**

7. Student Facilities:

Sl. No.	Name of infrastructure	Requirement as per Norms in number	Requirement as per Norms, in area	Available		Remarks/ Deficiency
				No.	Area in Sq .mts	
1	Girl's Common Room (Essential)	01	60 Sq.mts			
2	Boy's Common Room (Essential)	01	60 Sq.mts			
3	Toilet Blocks for Boys	01	24 Sq.mts			
4	Toilet Blocks for Girls	01	24 Sq.mts			
5	Drinking Water facility – Water Cooler (Essential).	01				
6	Boy's Hostel (Desirable)	01	9 Sq .mts / Room Single occupancy			
7	Girl's Hostel (Desirable)	01	9 Sq .mts / Room (single occupancy) 20 Sq mts / Room (triple occupancy)			
8	Power Backup Provision (Desirable)	01				

8. Computer and other Facilities:

Name	Required	Available		Remarks of the Inspectors
		No.	Area in Sq. mts	
Computer Room for B.Pharm Course	01 (Area 75 Sq mts)			
Computer (Latest Configuration)	1 system for every 10 students			
Printers	1 printer for every 10 computers			
Multi Media Projector	01			
Generator (5KVA)	01			

Signature of the Head of the Institution **Signature of the Inspectors**

9. Amenities (Desirable)

Name	Requirement as per Norms in area	Available		Not Available	Remarks/ Deficiency
		No.	Area in Sq. mts		
Principal quarters	80 Sq. mts				
Staff quarters	16 x 80 Sq. mts				
Canteen	100 Sq. mts				
Parking Area for staff and students					
Bank Extension Counter					
Co operative Stores					
Guest House	80 Sq. mts				
Transport Facilities for students					
Medical Facility (First Aid)					

10. A. Library books and periodicals

The minimum norms for the initial stock of books, yearly addition of the books and the number of journals to be subscribed are as given below:

Sl. No.	Item	Titles (No)	Minimum Volumes (No)	Available		Remarks of the Inspectors
				Title	Numbers	
1	Number of books	150	1500 adequate coverage of a large number of standard text books and titles in all disciplines of pharmacy			
2	Annual addition of books		100 to 150 books per year			
3	Periodicals Hard copies / online		10 National 05 International periodicals			
4	CDS		Adequate Nos			
5	Internet Browsing Facility		Yes/No (Minimum ten computers)			
6	Reprographic Facilities: Photo Copier Fax Scanner		01 01 01			
7	Library Automation and Computerized System					
8	**Library Timings**					

[

10.B. Library Staff:

	Staff	Qualification	Required	Available	Remarks of the Inspectors
1	Librarian	M. Lib	1		
2	Assistant Librarian	D. Lib	1		
3	Library Attenders	10 +2 / PUC	2		

Signature of the Head of the Institution **Signature of the Inspectors**

PART III ACADEMIC REQUIREMENTS

Course Curriculum:

1. Student Staff Ratio: **Theory** **Practicals** **Remarks of the Inspectors**

(Required ratio --- Theory → 60:1 and Practicals → 20:1) If more than 20 students in a batch 2 staff members to be present provided the lab is spacious.

2. Scheme of B. Pharm Course: **Annual** ☐

3. Date of Commencement of session / sessions:

Commencement	Completion
DD/MM/YY	DD/MM/YY

No of Days **No of Days**

4. Vacation: **Summer:** ☐ **Winter:** ☐

5. Total No. of working days: ☐

6. Time Table:

Time Table for B. Pharm course Enclosed Yes ☐ No ☐

7. Whether the prescribed numbers of classes are being conducted as per university norms

I B. Pharm:

Subject	No of Theory Classes		Practicals			Remarks of the Inspectors
	Prescribed No of Hrs	No of Hours Conducted	Prescribed No of Hours	No of Hours Conducted	No of Classes Conducted to fulfill Prescribed Number of Hours as in Column 5 No. of classes x hours per class	
1	2	3	4	5		

II B. Pharm:

Subject	No of Theory Classes		Practicals			Remarks of the Inspectors
	Prescribed No of Hrs	No of Hours Conducted	Prescribed No of Hours	No of Hours Conducted	No of Classes Conducted to fulfill Prescribed Number of Hours as in Column 5 No. of classes x hours per class	
1	2	3	4	5		

III B. Pharm:

Signature of the Head of the Institution **Signature of the Inspectors**

Subject	No of Theory Classes		Practicals			Remarks of the Inspectors
1	Prescribed No of Hrs 2	No of Hours Conducted 3	Prescribed No of Hours 4	No of Hours Conducted 5	No of Classes Conducted to fulfill Prescribed Number of Hours as in Column 5 No. of classes x hours per class	

IV B. Pharm:

Subject	No of Theory Classes		Practicals			Remarks of the Inspectors
1	Prescribed No of Hrs 2	No of Hours Conducted 3	Prescribed No of Hours 4	No of Hours Conducted 5	No of Classes Conducted to fulfill Prescribed Number of Hours as in Column 5 No. of classes x hours per class	

8 . Whether Tutorials are being conducted (if any, as per university norms) ☐ ☐

9. Number of Guest Lectures / Seminars / Work shops / Symposia / Presentations conducted during last Three years.

A.

Name of the Event	Year 200-	Year 200-	Year 200-
Guest Lectures			
Seminars			
Workshops			
Symposia			

B. Papers Presented / Published during last three years

	Year 200-		Year 200-		Year 200-	
	National	International	National	International	National	International
Published						
Presented						

Signature of the Head of the Institution **Signature of the Inspectors**

10. Whether Internal Assessments are conducted periodically as per university norms

Yes ☐ **No** ☐

Class	I Sessional Dates DD/MM/YY		II Sessional Dates DD/MM/YY		III Sessional Dates DD/MM/YY		Remarks of the Inspectors
	Theory	Practicals	Theory	Practicals	Theory	Practicals	
I B. Pharm							
II B. Pharm							
III B. Pharm							
IV B. Pharm							

11. Whether Evaluation of the internal assessments is Fair Yes ☐ No ☐

Class	No. of Candidates scored more than 80%		No. of Candidates scored between 60 - 80%		No. of Candidates scored between 50 - 60%		No. of Candidates Less than 50%		Remarks of the Inspectors
	Th	Pr	Th	Pr	Th	Pr	Th	Pr	
I B.Pharm									
II B.Pharm									
III B.Pharm									
IV B.Pharm									

12. Work load of Faculty members for B. Pharm

Sl. No	Name of the Faculty	Subjects taught	B. Pharm		Total work load	Specific Remarks of the Inspector
			Th	Pr		

13. Percentage of students qualified in GATE in the last Three Years

Details	Year 200-	Year 200-	Year 200-
No. of Students Appeared			
No. of Students Qualified			
Percentage			

14. Whether the Institution has an Industry – Institution Interaction cell Yes ☐ **No** ☐

If applicable please give the details for the previous Year

Events	Details for the Previous Year
No. of Industrial visits	
Industrial Tour	
Industrial Training	
No. of Resource Persons from the Industry for Guest Lectures	
No. of Collaboration projects with Industry	

Signature of the Head of the Institution **Signature of the Inspectors**

15. Percentage of students Placed through the College Placement Cell in the Last Three Years

Year	Year 200-	Year 200-	Year 200-
No. of students appeared for campus interview			
% Placed			

16. Whether Professional Society Activities are Conducted (Enclose Details) (ISTE, IPA, APTI, ICTA and Related Societies)

Yes	No

Signature of the Head of the Institution **Signature of the Inspectors**

PART IV - PERSONNEL

TEACHING STAFF:

1. **Details of Teaching Faculty for B.Pharm Course to be enclosed in the format mentioned below:**

Sl No	Name	Designation	Qualification	Date of Joining	Teaching Experience After PG	State Pharmacy Council Reg No.	Signature of the faculty	Remarks of the Inspectors

2. **Qualification and number of Staff Members**

Qualification		
M. Pharm	**PhD**	**Others - Full Time**

3. **Teaching Staff required year wise exclusively for B.Pharm for intake of 60 Students.**

	No. of staff required for I *B.Pharm	Available	No. of staff required for II B.Pharm	Available	No. of staff required for III B.Pharm	Available	No. of staff required for IV B.Pharm	Available
Principal	1		1		1		1	
Pharmaceutical Chemistry	1		2		3		4	
Pharmaceutical Analysis	1		--		-		1	
Pharmacology	1		2		3		4	
Pharmacognosy	1		2		3		3	
Pharmaceutics	1		2		3		4	
Total	**6**		**9**		**13**		**17**	
Part time teaching Staff	**3**		**-**		**-**		**-**	
Remarks of the Inspection Team								

***Part time teaching staff for Mathematics, Biology and Computer Science can be appointed.**

4. **Staff Pattern for B. Pharm courses Department wise / Division wise:**
   Professor: Asst. Professor: Lecturer

Signature of the Head of the Institution **Signature of the Inspectors**

Department / Division	Name of the post	For strength of 60 students	Provided by the institution	Remarks of inspection team
Department of Pharmaceutics	Professor	1		
	Asst. Professor	1		
	Lecturer	2		
Department of Pharmaceutical Chemistry (Including Pharmaceutical Analysis)	Professor	1		
	Asst. Professor	1		
	Lecturer	3		
Department of Pharmacology	Professor	1		
	Asst. Professor	1		
	Lecturer	2		
Department of Pharmacognosy	Professor	1		
	Asst. Professor	1		
	Lecturer	1		

5. Selection criteria and Recruitment Procedure for Faculty:

a.	Whether Recruitment Committee has been formed	Yes / No
b.	Whether Advertisement for vacancy is notified in the Newspapers	Yes / No
c.	Whether Demonstration Lecture has been conducted	Yes / No
d.	Whether opinion of Recruitment Committee Recorded	Yes / No

6.Details of Faculty Retention for:

Name of Faculty Member	Period	%
	Duration of 15 yrs. and above	
	Duration of 10 yrs. and above	
	Duration of 5 yrs. and above	
	Less than 5 yrs.	

7. Details of Faculty Turnover:

Name of Faculty Member	Period	More than 50%	50%	25%	Less than 25%
	% of faculty retained in last 3 yrs				

Signature of the Head of the Institution **Signature of the Inspectors**

8.Number of Non-teaching staff available for B. Pharm course for intake of 60 Students:

Sl. No.	Designation	Required (Minimum)	Required Qualification	Available		Remarks of the Inspection team
				Number	Qualification	
1	Laboratory Technician	1 for each Dept	D. Pharm			
2	Laboratory Assistants / Attenders	1 for each Lab (minimum)	SSLC			
3	Office Superintendent	1	Degree			
4	Accountant	1	Degree			
5	Store keeper	1	D. Pharm/ Degree			
6	Computer Data Operator	1	BCA / Graduate with Computer Course			
7	Office Staff I	1	Degree			
8	Office Staff II	2	Degree			
9	Peon	2	SSLC			
10	Cleaning personnel	Adequate	---			
11	Gardener	Adequate	---			

Signature of the Head of the Institution **Signature of the Inspectors**

9. Scale of pay for Teaching faculty (to be enclosed):

Sl. No	Name	Qualification	Designation	Basic pay Rs.	DA Rs.	HRA Rs.	CCA Rs.	Other allowance Rs.	Deductions			Bank A/C No	PAN No	EPF A/c no.	Total	Signature
									P T	TDS	EPF					

10. Whether facilities for Research / Higher studies are provided to the faculty?
(Inspectors to verify documents pertaining to the above)

11. Whether faculty members are allowed to attend workshops and seminars?
(Inspectors to verify documents pertaining to the above)

12. Scope for the promotion for faculty: Promotions **Yes** ☐ **No** ☐

13. Gratuity Provided **Yes** ☐ **No** ☐

14. Details of Non-teaching staff members (list to be enclosed):

Sl No	Name	Designation	Qualification	Date of Joining	Experience	Signature	Remarks of the Inspectors

15. Whether Supporting Staff (Technical and Administrative) are encouraged for skill up gradation programs. Yes/ No

Signature of the Head of the Institution **Signature of the Inspectors**

PART V - DOCUMENTATION

Records Maintained: Essential

Sl. No	Records	Yes	No	Remarks of the Inspectors
1	Admissions Registers			
2.	Individual Service Register			
3.	Staff Attendance Registers			
4.	Sessional Marks Register			
5.	Final Marks Register			
6.	Student Attendance Registers			
7.	Minutes of meetings- Teaching Staff			
8.	Fee paid Registers			
9.	Acquittance Registers			
10.	Accession Register for books and Journals in Library			
11.	Log book for chemicals and Equipment costing more than Rupees one lakh			
12.	Job Cards for laboratories			
13.	Standard Operating Procedures (SOP's) for Equipment			
14.	Laboratory Manuals			
15.	Stock Register for Equipment			
16.	Animal House Records as per CPCSEA			

Signature of the Head of the Institution **Signature of the Inspectors**

PART - VI

1. Financial Resource allocation and utilization for the past three years:
(Audited Accounts for previous year to be enclosed)

Sl	Expenditure in Rs.			Expenditure in Rs.			Expenditure in Rs			Remarks of the Inspectors*
No.	Total budget sanctioned	Recurring	Non Recurring	Total budget sanctioned	Recurring	Non Returning	Total budget sanctioned	Recurring	Non Returning	

2. Total amount spent on chemicals and glassware for the past three years:

Sl	Expenditure in Rs.			Expenditure in Rs.			Expenditure in Rs			Remarks of the Inspectors*
No.	Total budget allocated	Sanctioned	Incurred	Total budget allocated	Sanctioned	Incurred	Total budget allocated	Sanctioned	Incurred	
	Chemicals			Chemicals			Chemicals			
	Glassware			Glassware			Glassware			

3. Total amount spent on equipments for the past three years:
(Enclose purchase invoice)

Sl	Expenditure in Rs.			Expenditure in Rs.			Expenditure in Rs			Remarks of the Inspectors*
No.	Total budget allocated	Sanctioned	Incurred	Total budget allocated	Sanctioned	Incurred	Total budget allocated	Sanctioned	Incurred	
	Equipment			Equipment			Equipment			

Signature of the Head of the Institution **Signature of the Inspectors**

4. Total amount spent on Books and Journals for the past three years:

Sl No.	Expenditure in Rs.			Expenditure in Rs.			Expenditure in Rs			Remarks of the Inspectors*
	Total budget allocated	Sanctioned	Incurred	Total budget allocated	Sanctioned	Incurred	Total budget allocated	Sanctioned	Incurred	
1	Books			Books			Books			
2	Journals			Journals			Journals			

***Last three years including this academic year till the date of inspection**

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Signature of the Head of the Institution **Signature of the Inspectors**

PART VII – EQUIPMENT AND APPARATUS

Department wise list of minimum equipments required for B. Pharm (for a batch of 20 students)

DEPARTMENT OF PHARMACOLOGY
Equipment:

Sl. No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Microscopes	15			
2	Haemocytometer with Micropipettes	20			
3	Sahli's haemocytometer	20			
4	Hutchinson's spirometer	01			
5	Spygmomanometer	05			
6	Stethoscope	05			
7	Permanent Slides for various tissues	One pair of each tissue Organs and endocrine glands One slide of each organ system			
8	Models for various organs	One model of each organ system			
9	Specimen for various organs and systems	One model for each organ system			
10	Skeleton and bones	One set of skeleton and one spare bone			
11	Different Contraceptive Devices and Models	One set of each device			
12	Muscle electrodes	01			
13	Lucas moist chamber	01			
14	Myographic lever	01			
15	Stimulator	01			
16	Centrifuge	01			
17	Digital Balance	01			
18	Physical /Chemical Balance	01			
19	Sherrington's Kymograph Machine / Polyrite	10			

Signature of the Head of the Institution **Signature of the Inspectors**

20	Sherrington Drum	10			
21	Perspex bath assembly (single unit)	10			
22	Aerators	10			
23	Computer with LCD	01			
24	Software packages for experiment	01			
25	Standard graphs of various drugs	Adequate number			
26	Actophotometer	01			
27	Rotarod	01			
28	Pole climbing apparatus	01			
29	Analgesiometer (Eddy's hot plate and radiant heat methods)	01			
30	Convulsiometer	01			
31	Plethysmograph	01			
32	Digital pH meter	01			

Apparatus:

Sl. No.	Name	Minimum required No.s	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Folin-Wu tubes	60			
2	Dissection Tray and Boards	10			
3	Haemostatic artery forceps	10			
4	Hypodermic syringes and needles of size 15,24,26G	10			
5	Levers, cannulae	20			

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

DEPARTMENT OF PHARMACOGNOSY

Equipment:

Sl. No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Microscope with stage micrometer	15			
2	Digital Balance	02			
3	Autoclave	02			
4	Hot air oven	02			

Signature of the Head of the Institution **Signature of the Inspectors**

5	B.O.D.incubator	01			
6	Refrigerator	01			
7	Laminar air flow	01			
8	Colony counter	02			
9	Zone reader	01			
10	Digital pH meter	01			
11	Sterility testing unit	01			
12	Camera Lucida	15			
13	Eye piece micrometer	15			
14	Incinerator	01			
15	Moisture balance	01			
16	Heating mantle	15			
17	Flourimeter	01			
18	Vacuum pump	02			
19	Micropipettes (Single and multi channeled)	02			
20	Micro Centrifuge	01			
21	Projection Microscope	01			

Apparatus:

Sl. No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Reflux flask with condenser	20			
2	Water bath	20			
3	Clavengers apparatus	10			
4	Soxhlet apparatus	10			
6	TLC chamber and sprayer	10			
7	Distillation unit	01			

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

DEPARTMENT OF PHARMACEUTICAL CHEMISTRY

Equipment:

Sl. No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Hot plates	05			
2	Oven	03			
3	Refrigerator	01			

Signature of the Head of the Institution **Signature of the Inspectors**

4	Analytical Balances for demonstration	05			
5	Digital balance 10mg sensitivity	10			
6	Digital Balance (1mg sensitivity)	01			
7	Suction pumps	06			
8	Muffle Furnace	01			
9	Mechanical Stirrers	10			
10	Magnetic Stirrers with Thermostat	10			
11	Vacuum Pump	01			
12	Digital pH meter	01			
13	Microwave Oven	02			

Apparatus:

Sl. No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Distillation Unit	02			
2	Reflux flask and condenser single necked	20			
3	Reflux flask and condenser double / triple necked	20			
4	Burettes	40			
5	Arsenic Limit Test Apparatus	20			
6	Nesslers Cylinders	40			

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

DEPARTMENT OF PHARMACEUTICS

Equipment:

Sl. No.	Name	Minimum Required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Mechanical stirrers	10			
2	Homogenizer	05			
3	Digital balance	05			
4	Microscopes	05			
5	Stage and eye piece micrometers	05			
6	Brookfield's viscometer	01			
7	Tray dryer	01			
8	Ball mill	01			

Signature of the Head of the Institution **Signature of the Inspectors**

9	Sieve shaker with sieve set	01			
10	Double cone blender	01			
11	Propeller type mechanical agitator	05			
12	Autoclave	01			
13	Steam distillation still	01			
14	Vacuum Pump	01			
15	Standard sieves, sieve no. 8, 10, 12,22,24, 44, 66, 80	10 sets			
16	Tablet punching machine	01			
17	Capsule filling machine	01			
18	Ampoule washing machine	01			
19	Ampoule filling and sealing machine	01			
20	Tablet disintegration test apparatus IP	01			
21	Tablet dissolution test apparatus IP	01			
22	Monsanto's hardness tester	01			
23	Pfizer type hardness tester	01			
24	Friability test apparatus	01			
25	Clarity test apparatus	01			
26	Ointment filling machine	01			
27	Collapsible tube crimping machine	01			
28	Tablet coating pan	01			
29	Magnetic stirrer, 500ml and 1 liter capacity with speed control	05 EACH 10			
30	Digital pH meter	01			
31	All purpose equipment with all accessories	01			
32	Aseptic Cabinet	01			
33	BOD Incubator	02			
34	Bottle washing Machine	01			
35	Bottle Sealing Machine	01			
36	Bulk Density Apparatus	02			
37	Conical Percolator (glass/ copper/ stainless steel)	10			
38	Capsule Counter	02			
39	Energy meter	02			
40	Hot Plate	02			

Signature of the Head of the Institution **Signature of the Inspectors**

41	Humidity Control Oven	01			
42	Liquid Filling Machine	01			
43	Mechanical stirrer with speed regulator	02			
44	Precision Melting point Apparatus	01			
45	Distillation Unit	01			

Apparatus:

Sl. No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Ostwald's viscometer	15			
2	Stalagmometer	15			
3	Desiccator*	05			
4	Suppository moulds	20			
5	Buchner Funnels (Small, medium, large)	05 each			
6	Filtration assembly	01			
7	Permeability Cups	05			
8	Andreason's Pipette	03			
9	Lipstick moulds	10			

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

PHARMACEUTICAL BIOTECHNOLOGY

Sl. No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Orbital shaker incubator	01			
2	Lyophilizer (Desirable)	01			
3	Gel Electrophoresis (Vertical and Horizontal)	01			
4	Phase contrast/Trinocular Microscope	01			
5	Refrigerated Centrifuge	01			
6	Fermenters of different capacity (Desirable)	01			
7	Tissue culture station	01			
8	Laminar airflow unit	01			

Signature of the Head of the Institution **Signature of the Inspectors**

9	Diagnostic kits to identify infectious agents	01			
10	Rheometer	01			
11	Viscometer	01			
12	Micropipettes (single and multi channeled)	01 each			
13	Sonicator	01			
14	Respinometer	01			
15	BOD Incubator	01			
16	Paper Electrophoresis Unit	01			
17	Micro Centrifuge	01			
18	Incubator water bath	01			
19	Autoclave	01			
20	Refrigerator	01			
21	Filtration Assembly	01			
22	Digital pH meter	01			

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

CENTRAL INSTRUMENTATION ROOM:

Sl. No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Colorimeter	01			
2	Digital pH meter	01			
3	UV- Visible Spectrophotometer	01			
4	Flourimeter	01			
5	Digital Balance (1mg sensitivity)	01			
6	Nephelo Turbidity meter	01			
7	Flame Photometer	01			
8	Potentiometer	01			
9	Conductivity meter	01			
10	Fourier Transform Infra Red Spectrometer (Desirable)	01			
11	HPLC	01			
12	HPTLC (Desirable)	01			

Signature of the Head of the Institution **Signature of the Inspectors**

13	Atomic Absorption and Emission spectrophotometer (Desirable)	01			
14	Biochemistry Analyzer (Desirable)	01			
15	Carbon, Hydrogen, Nitrogen Analyzer (Desirable)	01			
16	Deep Freezer (Desirable)	01			
17	Ion- Exchanger	01			
18	Lyophilizer (Desirable)	01			

Signature of the Head of the Institution **Signature of the Inspectors**

Observation of the Inspectors:

Compliance of the last recommendations by Inspectors
Specific observations if not complied

Signature of Inspectors:	**1.**
	2.

Note:

1. **The Inspection Team is instructed to physically verify the details and records filled up by the college in the application form submitted by the college, which is with you now and record the observations, opinions and recommendations in clear and explicit terms.**
2. **The team is requested to record their comments only after physical verification of records and details.**

Signature of the Head of the Institution **Signature of the Inspectors**

PHARMACY COUNCIL OF INDIA

STAFF DECLARATION FORM

From

Teacher's Name ……
(as on University Degree certificate)

Recent Passport size photo of the Employee
Signed by Dean/Principal of the College.

Photograph

Date of Birth & Age ……

Qualification	College & University	Year	Registration No. with State Pharmacy Council	Name of the State Pharmacy Council
B.Pharm				
M.Pharm				
(Ph.D.)/others				

Copies of Registration Certificate and University degree/PG/Ph.D. be attached.

Present Designation : _____

Department : _____

College : _____

City : _____

Nature of appointment : Permanent/Temporary/Adhoc/Honorary/Part-time

Whether belongs to : O.G./SC/ST/OBC/Ex-service/Others

Contd. on page 2

Permanent Residential
Address of employee : _____

_____

_____

Copy of Passport/Voter Card/Ration Card/PAN No./Electricity Bill/Driving License Attached as a proof of residence.

STD Code Phone No.

Phone & Fax Number with Code
Office : _____

Residence : _____

E-mail address : _____

Date of joining present institution : _____ as _____
(Designation)

Details of the previous appointments/teaching experience

Position	**Name of Institution**	**From**	**To**	**Total Experience in years**
Lecturer				
Reader/ Assistant Professor				
Professor				
Principal				

1) Before joining present institution I was working at _____ as _____ and relieved on _____ after resigning/retiring **(relieving order is enclosed from the previous institution).**

2) I, hereby undertake that I have not given my name as teaching faculty in any other Pharmacy institution for teaching any Pharmacy course and not working in any where other than this institution Pharmacy College/Medical College/Dental College/Industry/Community Pharmacy/Hospital Pharmacy/Govt. Service/any other service in the State or outside the State in any capacity full-time/part-time other than the above.

Contd. on page 3

3) I have drawn total emoluments from this college as under :-

	Amount Received	**TDS**
April, 2013		
May, 2013		
June, 2013		
July, 2013		
August, 2013		
September, 2013		
October, 2013		
November, 2013		
December, 2013		
January, 2014		
February, 2014		
March, 2014		

(Copy of my form 16 (TDS certificate) for financial year 2013-2014 is attached)

P.A.N. : _____ Circle : _____

Declaration

1. I have not worked at any other pharmacy college/institution or presented myself at any inspection for the academic year 2012-2013.

2. It is declared that each statement and/or contents of this declaration made by the undersigned are absolutely true and correct. In the event of any statement made in this declaration subsequently turning out to be incorrect or false the undersigned has understood and accepted that such misdeclaration in respect to any content of this declaration shall also be treated as a gross misconduct thereby rendering the undersigned liable for necessary disciplinary action (including removal of his name from Register of Registered Pharmacists).

Signature of the Employee:

Date : Place:

Endorsement

This endorsement is the certification that the undersigned has satisfied himself/herself about the correctness and veracity of each content of this declaration and endorses the abovementioned declaration as true and correct. In the event of this declaration turning out to be either incorrect or any part of this declaration subsequently turning out to be incorrect or false it is understood and accepted that the undersigned shall also be equally responsible besides the declarant himself/herself for any such misdeclaration or misstatement.

Countersigned by the Director/Dean/
Principal in respect of Teaching Staff

Date : Place :

SCHEME FOR OBTAINING PERMISSION OF PHARMACY COUNCIL OF INDIA TO START PHARM.D. OR PHARM.D. AND PHARM.D. (POST BACCALUERATE) PROGRAMME

All applications under this scheme be submitted to the Secretary, Pharmacy Council of India, before the prescribed date mentioned in the schedule

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1. Eligibility Criteria:

The following organizations shall be eligible to apply in the SIF for permission to start the Pharm.D., programme/s namely:

a. A State Government / Union Territory
b. A University
c. A Registered Society under the Societies Registration Act

2. Qualifying Criteria:

Conditions to be fullfilled by person, institution, society or University to qualify to apply to PCI for permission to start Pharm.D. programme/s:

a. The consent of Affiliation for the proposed Pharm.D. programme/s by the applicant from a University.

b. No admission shall be made by the applicant to the proposed Pharm.D. programme/s without prior permission of the PCI.

c. The applicant shall provide necessary additional infrastructural facilities as prescribed by the PCI under "Appendix – B" of Pharm.D. regulations for the starting of Pharm.D. programme/s. Opening of the Pharm.D. programme/s in a hired or rented building shall not be permitted.

d. The applicant should have been approved under section 12 of the Pharmacy Act 1948 for the conduct of B.Pharm course.

e. The applicant shall provide 300 bed hospital facility as prescribed under regulation 2) of "Appendix – B" of Pharm.D. regulations.

Signature of the Head of the Institution Signature of the Inspectors

3. Form and Procedure:

a. The applicant, subject to the fulfillment of above eligibility and qualifying criteria and also the requirements specified under the Pharm.D. regulations shall submit application in prescribed Standard Inspection Format (SIF) only, in triplicate to start the Pharm.D. programme/s to the Pharmacy Council of India.

b. The SIF shall be submitted by the applicant either by Courier, Registered Post or in person to the Secretary, Pharmacy Council of India, New Delhi, along with a non-refundable application fee of Rs.2.00 lakhs in the form of Demand Draft in favour of „Pharmacy Council of India" payable at New Delhi. The said fee covers registration of application, technical scrutiny, contingent expenditure and two inspections.

   Beyond two inspections, the normal inspection fee prescribed by council will apply as prescribed under para 4 of this scheme.

c. The schedule for receipt of applications for the starting of Pharm.D programme and processing of applications by the Pharmacy Council of India is given in the para 6 of this scheme.

d. The applications received by the Pharmacy Council of India will be registered in the council office for scrutiny. Registration of application will only signify the acceptance of the application for scrutiny. Incomplete applications will be rejected summarily without refund of application fee. The applicant may apply a fresh within the stipulated time alongwith the non-refundable application fee.

e. The Council will scrutinize the application in the first instance in terms of the feasibility of starting the proposed programme/s at the said institution. While evaluating the application, the council may seek clarification or additional information from the applicant as deemed necessary and carry out physical inspection to verify the information supplied by the applicant.

f. After examining the application and after conducting necessary physical inspections, the Council office shall submit to the Central Council factual report stating that:

   i. The applicant fulfils the eligibility and qualifying criteria.

   ii. The applicant has the necessary managerial and financial capabilities to establish the Pharm.D. programme.

   iii. The applicant has a feasible and time bound programme for recruitment of faculty and staff as prescribed in the Pharm.D. regulations and that the necessary posts stand created.

iv. The applicant has appointed staff for 1st year of Pharm.D., & 4th year of Pharm.D. (Post bacculearte) programme.

v. The applicant has not admitted students without prior permission of PCI.

vi. Deficiencies of any kind shall be pointed out indicating whether these are remediable or not.

g. The Central Council may then permit/approve/reject the application for conduct of Pharm.D., Programme/s and accordingly issue letter in a time bound manner specifying annual targets to be achieved by the applicant during the following years, if permission/approval is granted.

h. The recommendation of the Central Council shall be final.

i. The permission to establish the Pharm.D., Programme will be given initially for a period of one year and will be renewed on yearly basis subject to verification of the achievements of annual targets. It is the responsibility of the institution to apply to the Pharmacy Council of India for purpose of renewal six month prior to the expiry of the initial permission. This process of renewal of permission will continue till such time the establishment of all infrastructural facilities and staff requirements prescribed in the Pharm.D. regulation are completed and approval under section 12 of the Pharmacy Act 1948 for the conduct of Pharm.D programme is granted to the institution.

j. The Council may then extend the approval of Pharm.D., Programme under section 12 of Pharmacy Act 1948 conducted by the institution for a period 1/3/5 years as the case may be for which the institution shall apply to the Pharmacy Council of India six months prior to the expiry of approval held.

k. The Council may obtain any other information from the institution as it deems necessary.

4. Fee Structure:

The fee structure prescribed for Pharm.D programme is as under -

Detail	**Amount**
1. Starting of Pharm.D programme (including fees for 2 inspections) to be submitted with the application	Rs.2,00,000
2.Yearwise approval and inspection fee	Rs.1,00,000
3.Approval under section 12 (including fees for two inspections)	Rs.2.00,000
4.Verification of compliance if any	Rs.1,00,000
5.Annual affiliation fee after approval under section 12	Rs. 50,000

Signature of the Head of the Institution Signature of the Inspectors

5. Reapplication :

Wherever the Central Council has rejected the application of the applicant for the conduct of Pharm.D. programme/s the applicant may apply a fresh for the conduct of Pharm.D. programme/s in the ensuing year following the dates of submission etc., mentioned in the schedule under para 6 of this scheme.

6. Schedule for submission of application and processing:

Sl. No.	Stage of processing	last date
a.	Receipt of application	1st August to 31st August of the previous year.
b.	Completion of inspection	15th December
c.	Approval of central council	31st March
d.	EC/CC decision on website	30th April

Signature of the Head of the Institution Signature of the Inspectors

PHARMACY COUNCIL OF INDIA

STANDARD INSPECTION FORM

- PHARM.D
- PHARM.D. and PHARM.D (POST BACCALAUREATE)

General Information pertaining to :-

1. College and teaching hospital (Pharmacy Practice site)

2. Courses of Study leading to :-

Pharm D. course

Name of Institution : .....

Place and Address : .....

Principal/Dean
Tel. No. Off. .....Res.....Fax .....

Mobile No. : .....

email : .....

Name and address of Affiliating University : .....

Date : **Signature of Dean/Principal**

This form shall be precisely filled in, verified and signed by the Head/Principal, of the institution and forwarded in triplicate to the Secretary, Pharmacy Council of India. The entries should be as required under the PCI (Pharm.D.) regulations and norms.

Signature of the Head of the Institution Signature of the Inspectors

PHARMACY COUNCIL OF INDIA

Standard Inspection Format (S.I.F) for

- Pharm. D. Programme

or

- Pharm.D. and Pharm. D. (Post Baccalaureate) Programmes

(To be filled and submitted to PCI by an organization seeking approval of the course/continuation of the approval)

(SIF-D)

To be filled up by P.C.I. ***To be filled up by inspectors***

Inspection No. : **Date of Inspection:**

FILE No. : **NAME OF THE INSPECTORS: 1. _____ _ _ _ _ __**
(BLOCK LETTERS)

2. _____ _ _ _ _ __

PART – I
A - GENERAL INFORMATION

A – I. 1 Applicant is for Pharm.D. ☐ Pharm.D. and Pharm.D. (Post Baccalaureate) ☐ (Tick the relevant Box)	
A – I .2 Year of starting of the course	
A – I .3 Name of the Institution: Complete Postal address: STD code Telephone No. Fax No. E-mail	
A – I .4 Status of the course conducting body: Government / University / Autonomous / Aided / Private (Enclose copy of Registration documents of Society/Trust)	
A – I .5 Name, address of the Society/Trust/ Management (attach documentary evidence) STD Code: Telephone No: Fax No: E-mail Web Site:	
A – I.5 a) Whether the Jan Aushadhi Medical Store has been opened by your institution	Yes / No (Please tick (✓) the relevant portion)

Signature of the Head of the Institution Signature of the Inspectors

A – I .6 Name, Designation and Address of person to be contacted Name Designation Address STD Code Telephone No. Office Residence Mobile No. Fax No. E-Mail	
A – I .7 Name and Address of the Head of the Institution	
A – I .8 Name of the Examining Authority Complete Postal address: STD code Telephone No. Fax No. E-mail Website	

Signature of the Head of the Institution Signature of the Inspectors

A – I .9

APPLICATION FOR INSTITUTION SEEKING APPROVAL FOR PHARM. D. ☐ OR PHARM. D. AND PHARM.D. (POST BACCALAUREATE) PROGRAMME ☐ (Tick appropriate box)

a. **DETAILS OF INSPECTION/AFFILIATION FEE PAID**

Name of the Course	Affiliation Fee/Inspection fee for/up to the year	D.D. No	Dated
(a) Pharm. D.	200 – 200		
(b) Pharm. D. Post Baccalaureate	200 – 200		

b. **APPROVAL STATUS OF THE INSTITUTION**

Name of the Course	Approved up to	Intake Approved and Admitted	PCI	STATE GOVT	UNIVERSITY	Remarks of the Inspectors
D.Pharm.		**Approval Letter No. and Date**				
		Approved Intake				
		Actually Admitted				
B.Pharm.		**Approval Letter No. and Date**			-------	
		Approved Intake			---------	
		Actually Admitted			---------	

Note: Enclose relevant documents

A –I. 10

Whether other Educational Institutions/Courses are also being run by the Trust / Institution in the same Building / campus? If yes, give status Yes ☐ No ☐

A – I. 10 a

Status of the Pharmacy Course:

Independent Building ☐

Wing of another college ☐

Separate Campus ☐

Multi Institutional Campus ☐

Any Other, please specify ☐

A – I. 10 b

STATUS OF APPLICATION

Course	Intake	Remarks
	Permissible	**Proposed Intake**
Pharm. D.	30	
Pharm. D. (P.B)	10	

Signature of the Head of the Institution Signature of the Inspectors

B - Details of the Institution

B –I .1 **Name of the Principal/Head**					
Qualification/ Experience	**Qualification***		**Teaching Experience Required**	**Actual experience**	**Remarks of the Inspectors**
	M. Pharm		15 years in teaching or Research out of which 5 years should be as Professor.		
	PhD				

*** Documentary evidence should be provided**

B –I .2

For institution seeking extension of approval

Course	**Date of last Inspection**	**Remarks of the last Inspection Report**	**Deficiencies rectified / Not rectified**	**Intake reduced/Stopped in the last 03 years***
(a) Pharm. D.				
(b) Pharm.D. Post Baccalaureate				

* Enclose Documents (write NA if not applicable)

B –I .3

Type of Institution	**Government/Trust/Society/Individual/University**
Details of the Governing Body	**Enclosed / Not Enclosed**
Minutes of the last Governing council Meeting	**Enclosed / Not Enclosed**

B –I .4 Pay Scales:

Staff	**Scale of pay**	**PF**	**Gratuity**	**Pension benefit**	**Remarks of the Inspectors**
Teaching Staff	**AICTE /UGC/State Govt.** Yes / No	Yes / No	Yes / No	Yes / No	
Non-Teaching Staff	**AICTE /UGC/State Government** Yes / No	Yes / No	Yes / No	Yes / No	

B –I .5 Co – Curricular Activities / Sports Activities

Whether college has NSS Unit (Yes/No)?	
NSS Programme Officer's Name	
Whether students participating in University level cultural activities / Co- curricular/sports activities	Yes/No
Physical Instructor	Available / Not available
Sports Ground	Individual / Shared

Signature of the Head of the Institution Signature of the Inspectors

C - FINANCIAL STATUS OF THE INSTITUTION

Audited financial Statement of Institute should be furnished

C –1.1 Resources and funding agencies (give complete list)

C –1.2 Please provide following Information

Receipts				Expenditure			Remarks of the Inspectors
Sl. No.	Particulars	Amount		Sl. No.	Particulars	Amount	
1.	Grants a. Government b. Others			CAPITAL EXPENDITURE			
2.	Tuition Fee			1.	Building		
3.	Library Fee			2.	Equipment		
4.	Sports Fee			3.	Others		
5.	Union Fee			REVENUE EXPENDIUTRE			
6.	Others			1	Salary		
				2.	MAINTENANCE EXPENDITURE		
					i College		
					ii Others		
				3.	University Fee (If any)		
				4.	Apex Bodies Fee		
				5.	Government Fee		
				6.	Misc.Expenditure		
				Total			

Note: Enclose relevant documents

Signature of the Head of the Institution Signature of the Inspectors

PART- II PHYSICAL INFRASTRUCTURE

1. a. Availability of Land for the Pharmacy College : _____ _ __ acres

b. Building : **Own/Rented/Leased**

c. Land Details to be in the name of Trust and Society

i) Own – Records to be enclosed
Sale deed/relevant document : **Enclosed/Not available**

d. Building:

i) Approved Building plan, : **Enclosed/Not available**

e. Total Built up Area of the college building in Sq.mts : Built up Area

f. Amenities and Circulation Area in Sq.mts.

2. Class rooms:

Total Number of Class rooms available and number provided for Pharm. D. or Pharm.D. and Pharm. D. (Post Baccalaureate) Programme

Class	Required	Available Numbers	Required Area for each Class Room	Available Area in Sq.mts.	Remarks of the Inspectors
D.Pharm./B.Pharm.					
Pharm. D. *	2		90 Sq.mts. each (Desirable) 75 Sq.mts. each (Essential)		
Pharm. D. Post Baccalaureate					

(* To accommodate 30 students for Pharm D and 10 for Pharm. D. Post Baccalaureate)

3. **Laboratory requirement for both Pharm. D. or Pharm.D. and Pharm.D. (Post Baccalaureate) Programme***

Sl. No.	Infrastructure for	Minimum requirement as per Norms	Available No. & Area in Sq.mts.	Remarks of the Inspectors
1	Laboratory Area (8 Labs)	75 Sq.mts. each		
2	- Pharmaceutics and Pharmacokinetics Lab - Life Science (Pharmacology, Physiology, Pathophysiology) - Phytochemistry or Pharmaceutical Chemistry - Pharmacy Practice	2 2 2 2		
3	Preparation Room for each lab (One room can be shared by two labs, if it is in between two labs)	10 Sq.mts. (Minimum)		

* Yearwise requirement will be considered.

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4	Area of the Machine Room	80-100 Sq.mts		
5	Central Instrument Room	80 Sq.mts with AC		
6	Store Room – I	1 (Area 100 Sq mts)		
7	Store Room – II (For Inflammable chemicals)	1 (Area 20 Sq mts)		
8 a) b) c) d) * Attach a copy of MOU between institution & Hospital.	Hospital with teaching facility – (Please tick) Own ☐ Teaching Hospital approved by MCI* or University * ☐ Govt. Hospital * ☐ Corporate type * ☐	300 bedded hospital. Tertiary Care Hospital desirable Medicine (Compulsory) (Any three of the below) • Surgery • Pediatrics • Gynecology and Obstetrics • Psychiatry • Skin and VD • Orthopedics		
9.	Deptt. of Pharmacy Practice/Clinical Pharmacy in Hospital	3 Sq.mts. per student		

† **The Institutions will not be permitted to run the above course in rented/leased building.**

1. All the Laboratories should be well lit & ventilated
2. All Laboratories should be provided with basic amenities and services like exhaust fans and fuming chamber to reduce the pollution wherever necessary.
3. All the laboratories should be provided with safety measures like fire safety, chemical exposure safety and bio safety.
4. The workbenches should be smooth and easily cleanable preferably made of non-absorbent material.
5. The water taps should be non-leaking and directly installed on sinks Drainage should be efficient.
6. Balance room should be attached to the concerned laboratories.

4. Administration Area:

Sl.No.	Name of infrastructure	Requirement as per Norms in number	Requirement as per Norms, in area	Available		Remarks of the Inspectors
				No.	Area in Sq .mts	
1	Principal's Chamber	01	30 Sq .mts			
2	Office – I – Establishment	01	60 Sq. mts			
3	Office – II – Academics					
4	Confidential Room					

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5. Staff Facilities:

Sl No.	Name of infrastructure	Requirement as per Norms in number	Requirement as per Norms in area	Available		Remarks of the Inspectors
				No.	Area in Sq. mts	
1	HODs for Pharm. D. and Post Baccalaureate Programme	Minimum 4	20 Sq mts x 4			
2	Faculty Rooms for Pharm. D. and Pharm.D. Post Baccalaureate Programme		10 Sq mts x n (n=No of teachers)			

6. Museum, Library, Animal House [should have approval of the Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA)] and other Facilities:

Sl No.	Name of infrastructure	Requirement as per Norms in number	Requirement as per Norms in area	Available		Remarks of the Inspectors
				No.	Area in Sq. mts	
1	Animal House	01	80 Sq. mts			
2	Library	01	150 Sq. mts			
3	Museum	01	50 Sq. mts (May be attached to the Pharmacognosy lab)			
4	Auditorium / Multi Purpose Hall (Desirable)	01	250 – 300 seating capacity			
5	Herbal Garden (Desirable)	01	Adequate Number of Medicinal Plants			

7. Student Facilities:

Sl. No.	Name of infrastructure	Requirement as per Norms in number	Requirement as per Norms in area	Available		Remarks of the Inspectors
				No.	Area in Sq. mts	
1	Girl's Common Room (Essential)	01	60 Sq. mts			
2	Boy's Common Room (Essential)	01	60 Sq. mts			
3	Toilet Blocks for Boys	01	24 Sq. mts			
4	Toilet Blocks for Girls	01	24 Sq. mts			
5	Drinking Water facility – Water cooler (Essential).	01	-			
6	Boy's Hostel (Desirable)	01	9 Sq. mts/ Room Single occupancy			
7	Girl's Hostel (Desirable)	01	9 Sq. mts / Room (single occupancy) 20 Sq mts / Room (triple occupancy)			
8	Power Backup Provision (Essential)	01				

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8. Computer and other Facilities:

Name	Required	Available		Remarks of the Inspectors
		No.	Area in Sq. mts	
Computer Room	100 Sq.mts.			
Computer (Latest configuration)	1 system for every 10 students			
Printers	1 printer for every 10 computers			
Multi Media Projector	01			
Generator (5KVA)	01			

9. Amenities (Desirable)

Name	Requirement as per Norms in area	Available		Not Available	Remarks of the Inspectors
		No.	Area in Sq. mts		
Principal's quarter	120 Sq. mts				
Staff quarters	16 x 80 Sq mts				
Canteen	100 Sq. mts				
Parking Area for staff and students					
Bank Extension Counter					
Co operative Stores					
Guest House	80 Sq. mts				
Auditorium					
Seminar Hall					
Transport Facilities for students					
Medical Facility (First Aid)					

10. A. Library books and periodicals

The minimum norms for the initial stock of books yearly addition of the books and the number of journals to be subscribed are as given below:

Sl. No.	Item	Titles (No)	Minimum Volumes (No)	Available		Remarks of the Inspectors
				Title	No.	
1	Number of books	150	1500 adequate coverage of a large number of standard text books and titles in all disciplines of pharmacy			
2	Annual addition of books		150 books per year			
3	Periodicals Hard copies / online		20 National 10 International periodicals			

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4	CDS		Adequate Nos			
5	Internet Browsing Facility		Yes/No (Minimum ten Computers)			
6	Reprographic Facilities: Photo Copier Fax Scanner		 01 01 01			
7	Library Automation and Computerized System (desirable)					
8	Library Timings					

10.B. Subject wise Classification of books available :

Sl. No	Subject	Available		Remarks of the Inspectors
		Titles	Numbers	
1	Pharmacy Practice			
2	Human Anatomy & Physiology			
3	Pharmaceutics (Dispensing & General Pharmacy)			
4	Pharmacognosy			
5	Pharmaceutical Organic Chemistry			
6	Pharmaceutical Inorganic Chemistry			
7	Pharmaceutical microbiology			
8	Pathophysiology			
9	Applied Biochemistry & Clinical Chemistry			
10	Pharmacology			
11	Pharmaceutical Jurisprudence			
12	Pharmaceutical Dosage Forms			
13.	Community Pharmacy			
14.	Clinical Pharmacy			
15.	Hospital Pharmacy			
16.	Pharmacotherapeutics			
17.	Pharmaceutical analysis			
18.	Medicinal Chemistry			
19.	Biology			
20.	Computer Science or Computer Application in pharmacy			
21	Mathematics/Statistics			

10.C. Library Staff:

	Staff	Qualification	Required	Available	Remarks of the Inspectors
1	Librarian	M. Lib	1		
2	Assistant Librarian	B. Lib	1		
3	Library Attenders	10 +2 / PUC	2		

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PART III ACADEMIC REQUIREMENTS

Course Curriculum:

1. Student Staff Ratio:

(Required ratio --- Theory → 30:1 and Practicals → 30:1) If more than 20 students in a batch 2 staff members to be present provided the lab is spacious.

Class	Theory	Practicals	Remarks of the Inspectors
Pharm. D.			
Pharm. D. Post Baccalaureate Programme			

2. Academic Calender

Proposed date of Commencement of session / sessions for PHARM. D.:

Commencement	Completion
DD/MM/YY	DD/MM/YY

3. Vacation for PHARM. D. : **Summer:** ☐ **No of Days** **Winter:** ☐ **No of Days**

4. Total No. of working days for PHARM. D.: ☐
(Requirement not less than 200 working days/year)

5. Date of Commencement of session for Pharm.D. Post Baccalaureate:

Commencement	Completion
DD/MM/YY	DD/MM/YY

6. Vacation for Pharm.D. Post Baccalaureate : **Summer:** ☐ **No of Days** **Winter:** ☐ **No of Days**

7. Total Number of working days for Pharm.D. Post Baccalaureate ☐
(Requirement not less than 200 working days/year)

8. Time Table copy Enclosed: **(Tick √)**

a. Pharm. D. course Yes ☐ No ☐

b. Pharm.D. Post Baccalaureate Course Yes ☐ No ☐

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10. Whether the prescribed numbers of classes per week are being conducted as per PCI norms.*

First year Pharm D:

Subject	No of Theory Classes		Practicals		Tutorials		Total No. of classes conducted No. of classes x hours per class	Remarks of the Inspectors
	Prescribed No of Hrs	No of Hours Conducted	Prescribed No of Hrs	No of Hours Conducted	Prescribed No of Hrs	No of Hours Conducted		
1	2	3	4	5	6	7		
Human Anatomy and Physiology	3		3		1			
Pharmaceutics	2		3		1			
Medicinal Biochemistry	3		3		1			
Pharmaceutical Organic Chemistry	3		3		1			
Pharmaceutical Inorganic Chemistry	2		3		1			
Remedial Mathematics/ Biology	3		3**		1			
Total hours	**16**		**18**		**6 = (40)**			

* Write NA if not Applicable
** for Biology

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Second Year Pharm D:

Subject	No of Theory Classes		Practicals		Tutorials		Total No. of classes conducted No. of classes x hours per class	Remarks of the Inspectors
	Prescribed No of Hrs	No of Hours Conducted	Prescribed No of Hrs	No of Hours Conducted	Prescribed No of Hrs	No of Hours Conducted		
1	2	3	4	5	6	7		
Pathophysiology	3		-		1			
Pharmaceutical Microbiology	3		3		1			
Pharmacognosy & Phytopharmaceuticals	3		3		1			
Pharmacology-I	3		-		1			
Community Pharmacy	2		-		1			
Pharmacotherapeutics-I	3		3		1			
Total Hours	**17**		**9**		**6 = 32**			

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Third year Pharm D:

Subject	No of Theory Classes		Practicals		Tutorials		Total No. of classes conducted No. of classes x hours per class	Remarks of the Inspectors
	Prescribed No of Hrs	No of Hours Conducted	Prescribed No of Hrs	No of Hours Conducted	Prescribed No of Hrs	No of Hours Conducted		
1	2	3	4	5	6	7		
Pharmacology-II	3		3		1			
Pharmaceutical Analysis	3		3		1			
Pharmacotherapeutics-II	3		3		1			
Pharmaceutical Jurisprudence	2		-		-			
Medicinal Chemistry	3		3		1			
Pharmaceutical Formulations	2		3		1			
Total hours	**16**		**15**		**5 = 36**			

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Fourth year Pharm D:

Subject 1	No of Theory Classes		No. of Hours of Practical/Hospital Posting		Tutorials		Total No. of classes conducted No. of classes x hours per class	Remarks of the Inspectors
	Prescribed No of Hrs 2	No of Hours Conducted 3	Prescribed No of Hrs 4	No of Hours Conducted 5	Prescribed No of Hrs 6	No of Hours Conducted 7		
Pharmacotherapeutics-III	3		3		1			
Hospital Pharmacy	2		3		1			
Clinical Pharmacy	3		3		1			
Biostatistics & Research Methodology	2		-		1			
Biopharmaceutics & Pharmacokinetics	3		3		1			
Clinical Toxicology	2		-		1			
Total hours	**15**		**12**		**6 = 33**			

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Fifth year Pharm D:

Subject 1	No of Theory Classes		No. of Hours of Hospital Posting *		Seminars		Total No. of classes conducted No. of classes x hours per class	Remarks of the Inspectors
	Prescribed No of Hrs 2	No of Hours Conducted 3	Prescribed No of Hrs 4	No of Hours Conducted 5	Prescribed No of Hrs 6	No of Hours Conducted 7		
Clinical Research	3		-		1			
Pharmacoepidemiology and Pharmacoeconomics	3		-		1			
Clinical Pharmacokinetics & Pharmacotherapeutic Drug Monitoring	2		-		1			
Clerkship *	-		-		1			
Project work (Six Months)	-		20		-			
Total hours	**8**		**20**		**4 = 32**			

***** *Attending ward rounds on daily basis.*

11. Work load of Faculty members for Pharm. D. and Pharm.D. Post Baccalaureate

Sl. No	Name of the Faculty	Subjects taught	Pharm. D.		Pharm. D. Post Baccalaureate		Total work load		Remarks of the Inspector
			Th	Pr	Th	Pr			

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12. Work load of Faculty members per week for Pharm.D.

Sl. No	Name of the Faculty	Subjects taught	Pharm. D.										Pharm.D.	Total work load	Remarks of the Inspector
			I		II		III		IV		V				
			Th	Pr	Th	Pr	Th	Pr	Th	Pr	Th	Pr			

13.Workload of Faculty members per week for Pharm.D. and Pharm.D. (Post Baccalaureate)

Sl. No	Name of the Faculty	Subjects taught	Pharm.D. and Pharm.D. (Post Baccalaureate)						Total work load	Remarks of the Inspector
			I		II		III			
			Th	Pr	Th	Pr	Th	Pr		

14. Percentage of students qualified in GATE in the last Three Years

Details	Year 200-	Year 200-	Year 200-
No. of Students Appeared			
No. of Students Qualified			
Percentage			

15. Whether Professional Society Activities are Conducted (Enclose details)

Yes	No

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Signature of the Inspectors

PART IV - PERSONNEL

TEACHING STAFF.

1. Details of Teaching Faculty available with the institution for teaching for D.Pharm., B.Pharm. and M.Pharm. Courses to be enclosed in the format mentioned below:

Sl No	Name	Designation	Qualification	Date of Joining	Teaching Experience	State Pharmacy Council Reg No.	Signature of the faculty	Remarks of the Inspectors

2. Details of Teaching Faculty exclusively available teaching for Pharm. D. Course to be enclosed in the format mentioned below:

Sl No	Name	Designation	Qualification	Date of Joining	Teaching Experience	State Pharmacy Council Reg No.	Signature of the faculty	Remarks of the Inspectors

3. Details of Teaching Faculty available for teaching for Pharm. D. and Pharm.D. (Post Baccalaureate) Course to be enclosed in the format mentioned below:

Sl No	Name	Designation	Qualification	Date of Joining	Teaching Experience		State Pharmacy Council Reg No.	Signature of the faculty	Remarks of the Inspectors
					After UG	After PG			

4. Qualification and number of Staff Members

Qualification							
B. Pharm		M. Pharm		PhD		Others	
							Part Time

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5. Staff Pattern for Pharm. D. or Pharm.D. and Pharm. D. (Post Baccalaureate) courses department wise for full duration of course/courses*: :

Professor: Asst. Professor: Lecturer

Department/Division	Name of the post	No. Required	Provided by the institution	Remarks of the Inspectors
Department of Pharmaceutics	Professor	1		
	Asst. Professor	1		
	Lecturer	2		
Department of Pharmaceutical Chemistry (Including Pharmaceutical Analysis)	Professor	1		
	Asst. Professor	1		
	Lecturer	3		
Department of Pharmacology	Professor	1		
	Asst. Professor	1		
	Lecturer	2		
Department of Pharmacognosy	Professor	1		
	Asst. Professor	1		
	Lecturer	1		
Department of Pharmacy Practice	Professor	1		
	Asst. Professor	2		
	Lecturer	3		

* Yearwise availability will be assessed.

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6. Selection criteria and Recruitment Procedure for Faculty:

a.	**Whether Recruitment Committee has been formed**	**Yes / No**
b.	**Whether Advertisement for vacancy is notified in the Newspapers**	**Yes / No**
c.	**Whether Demonstration Lecture has been conducted**	**Yes / No**
d.	**Whether opinion of Recruitment Committee Recorded**	**Yes / No**

7. Details of Faculty Retention for:

Name of Faculty Member	Period	Percentage
	Duration of 15 yrs. And above	
	Duration of 10 yrs. And above	
	Duration of 5 yrs. And above	
	Less than 5 yrs.	

8. Details of Faculty Turnover

Name of Faculty Member	Period	More than 50%	50%	25%	Less than 25%
	% of faculty retained in last 3 yrs				

9. Number of Non-teaching staff available for Pharm. D. or Pharm.D. and Pharm.D (Post Baccalaureate course) for full duration of course/courses*.

Sl. No.	Designation	Required Number	Required Qualification	Available		Remarks of the Inspectors
				Number	Qualification	
1	Laboratory Technician	1 for each Dept	D. Pharm			
2	Laboratory Assistants or Laboratory Attenders	1 for each Lab (minimum)	SSLC			
3	Office Superintendent	1	Degree			
4	Accountant	1	Degree			
5	Store keeper	1	D.Pharm or a Bachelor degree recognized by a University or institution.			
6	Computer Data Operator	1	BCA or Graduate with Computer Course			

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7	Office Staff I	1	Degree			
8	Office Staff II	2	Degree			
9.	Peon	2	SSLC			
10	Cleaning personnel	Adequate	---			
11	Gardener	Adequate	---			

- Inspectors to verify whether the Non teaching staff requirements for D.Pharm., B.Pharm. and M.Pharm. courses conducted by the institution are complied with or not.

* Yearwise availability will be assessed.

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10.Scale of pay for Teaching faculty (to be enclosed):

Sl. No	Name	Qualification	Designation	Basic pay Rs.	DA Rs.	HRA Rs.	CCA Rs.	Other allowance Rs.	Deductions			Bank A/C No	PAN No	EPF A/c no.	Total	Signature
									P T	TDS	EPF					

11. Whether facilities for Research / Higher studies are provided to the faculty?
(Inspectors to verify documents pertaining to the above)

12. Whether faculty members are allowed to attend workshops and seminars?
(Inspectors to verify documents pertaining to the above)

13. Scope for the promotion for faculty: Promotions **Yes** ☐ **No** ☐

14. Gratuity Provided **Yes** ☐ **No** ☐

15. Details of Non-teaching staff members (list to be enclosed) :

Sl No	Name	Designation	Qualification	Date of Joining	Experience	Signature	Remarks of the Inspectors

18. Whether Supporting Staff (Technical and Administrative) are encouraged for skill up gradation programs. Yes/ No

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PART V - DOCUMENTATION

Records Maintained: Essential

Sl. No	Records	Yes	No	Remarks of the Inspectors
1	Admissions Registers			
2.	Individual Service Register			
3.	Staff Attendance Registers			
4.	Sessional Marks Register			
5.	Final Marks Register			
6.	Student Attendance Registers			
7.	Minutes of meetings- Teaching Staff			
8.	Fee paid Registers			
9.	Acquittance Registers			
10.	Accession Register for books and Journals in Library			
11.	Log book for chemicals and Equipment costing more than Rupees one lakh			
12.	Job Cards for laboratories			
13.	Standard Operating Procedures (SOP's) for Equipment			
14.	Laboratory Manuals			
15.	Stock Register for Equipment			
16.	Animal House Records as per CPCSEA			

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PART – VI

1. Financial Resource allocation and utilization for the past three years: (Audited Accounts for previous year to be enclosed)

Sl	Expenditure in Rs.			Expenditure in Rs.			Expenditure in Rs			Remarks of the Inspectors*
No.	Total budget sanctioned	Recurring	Non Recurring	Total budget sanctioned	Recurring	Non Returning	Total budget sanctioned	Recurring	Non Returning	

2. Total amount spent on chemicals and glassware for the past three years:

Sl	Expenditure in Rs.			Expenditure in Rs.			Expenditure in Rs			Remarks of the Inspectors*
No.	Total budget allocated	Sanctioned	Incurred	Total budget allocated	Sanctioned	Incurred	Total budget allocated	Sanctioned	Incurred	
	Chemicals			Chemicals			Chemicals			
	Glassware			Glassware			Glassware			

3. Total amount spent on equipments for the past three years:
(Enclose purchase invoice)

Sl	Expenditure in Rs.			Expenditure in Rs.			Expenditure in Rs			Remarks of the Inspectors*
No.	Total budget allocated	Sanctioned	Incurred	Total budget allocated	Sanctioned	Incurred	Total budget allocated	Sanctioned	Incurred	
	Equipment			Equipment			Equipment			

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4. Total amount spent on Books and Journals for the past three years:

Sl No.	Expenditure in Rs.			Expenditure in Rs.			Expenditure in Rs			Remarks of the Inspectors*
	Total budget allocated	Sanctioned	Incurred	Total budget allocated	Sanctioned	Incurred	Total budget allocated	Sanctioned	Incurred	
1	Books			Books			Books			
2	Journals			Journals			Journals			

***Last three years including this academic year till the date of inspection**

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Department wise List of Minimum equipments required for Pharm.D. and Pharm.D. Post Baccalaureate

A. DEPARTMENT OF PHARMACOLOGY :

I. Equipment:

S.No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Microscopes	15			
2	Haemocytometer with Micropipettes	20			
3	Sahli's haemocytometer	20			
4	Hutchinson's spirometer	01			
5	Spygmomanometer	05			
6	Stethoscope	05			
7	Permanent Slides for various tissues	One pair of each tissue Organs and endocrine glands One slide of each organ system			
8	Models for various organs	One model of each organ system			
9	Specimen for various organs and systems	One model for each organ system			
10	Skeleton and bones	One set of skeleton and one spare bone			

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11	Different Contraceptive Devices and Models	One set of each device			
12	Muscle electrodes	01			
13	Lucas moist chamber	01			
14	Myographic lever	01			
15	Stimulator	01			
16	Centrifuge	01			
17	Digital Balance	01			
18	Physical /Chemical Balance	01			
19	Sherrington's Kymograph Machine or Polyrite	10			
20	Sherrington Drum	10			
21	Perspex bath assembly (single unit)	10			
22	Aerators	10			
23	Computer with LCD	01			
24	Software packages for experiment	01			
25	Standard graphs of various drugs	Adequate number			
26	Actophotometer	01			
27	Rotarod	01			
28	Pole climbing apparatus	01			
29	Analgesiometer (Eddy's hot plate and radiant heat methods)	01			
30	Convulsiometer	01			
31	Plethysmograph	01			
32	Digital pH meter	01			

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II. Apparatus:

S.No	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Folin-Wu tubes	60			
2	Dissection Tray and Boards	10			
3	Haemostatic artery forceps	10			
4	Hypodermic syringes and needles of size 15,24,26G	10			
5	Levers, cannulae	20			

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

B. DEPARTMENT OF PHARMACOGNOSY :

I. Equipment:

S.No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Microscope with stage micrometer	15			
2	Digital Balance	02			
3	Autoclave	02			
4	Hot air oven	02			
5	B.O.D.incubator	01			
6	Refrigerator	01			
7	Laminar air flow	01			
8	Colony counter	02			
9	Zone reader	01			
10	Digital pH meter	01			
11	Sterility testing unit	01			
12	Camera Lucida	15			
13	Eye piece micrometer	15			
14	Incinerator	01			
15	Moisture balance	01			

Signature of the Head of the Institution Signature of the Inspectors

16	Heating mantle	15			
17	Flourimeter	01			
18	Vacuum pump	02			
19	Micropipettes (Single and multi channeled)	02			
20	Micro Centrifuge	01			
21	Projection Microscope	01			

II. Apparatus:

S.No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Reflux flask with condenser	20			
2	Water bath	20			
3	Clavengers apparatus	10			
4	Soxhlet apparatus	10			
6	TLC chamber and sprayer	10			
7	Distillation unit	01			

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

C. DEPARTMENT OF PHARMACEUTICAL CHEMISTRY :

I. Equipment:

S.No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Hot plates	05			
2	Oven	03			
3	Refrigerator	01			
4	Analytical Balances for demonstration	05			

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5	Digital balance 10mg sensitivity	10			
6	Digital Balance (1mg sensitivity)	01			
7	Suction pumps	06			
8	Muffle Furnace	01			
9	Mechanical Stirrers	10			
10	Magnetic Stirrers with Thermostat	10			
11	Vacuum Pump	01			
12	Digital pH meter	01			
13	Microwave Oven	02			

II. Apparatus:

S.No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Distillation Unit	02			
2	Reflux flask and condenser single necked	20			
3	Reflux flask and condenser double/ triple necked	20			
4	Burettes	40			
5	Arsenic Limit Test Apparatus	20			
6	Nesslers Cylinders	40			

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

Signature of the Head of the Institution Signature of the Inspectors

D.***DEPARTMENT OF PHARMACEUTICS :***

I. Equipment:

S.No	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Mechanical stirrers	10			
2	Homogenizer	05			
3	Digital balance	05			
4	Microscopes	05			
5	Stage and eye piece micrometers	05			
6	Brookfield's viscometer	01			
7	Tray dryer	01			
8	Ball mill	01			
9	Sieve shaker with sieve set	01			
10	Double cone blender	01			
11	Propeller type mechanical agitator	05			
12	Autoclave	01			
13	Steam distillation still	01			
14	Vacuum Pump	01			
15	Standard sieves, sieve no. 8, 10, 12,22,24, 44, 66, 80	10 sets			
16	Tablet punching machine	01			
17	Capsule filling machine	01			
18	Ampoule washing machine	01			
19	Ampoule filling and sealing machine	01			
20	Tablet disintegration test apparatus IP	01			
21	Tablet dissolution test apparatus IP	01			
22	Monsanto's hardness tester	01			
23	Pfizer type hardness tester	01			

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24	Friability test apparatus	01			
25	Clarity test apparatus	01			
26	Ointment filling machine	01			
27	Collapsible tube crimping machine	01			
28	Tablet coating pan	01			
29	Magnetic stirrer, 500ml and 1 liter capacity with speed control	05 EACH 10			
30	Digital pH meter	01			
31	All purpose equipment with all accessories	01			
32	Aseptic Cabinet	01			
33	BOD Incubator	02			
34	Bottle washing Machine	01			
35	Bottle Sealing Machine	01			
36	Bulk Density Apparatus	02			
37	Conical Percolator (glass/copper/ stainless steel)	10			
38	Capsule Counter	02			
39	Energy meter	02			
40	Hot Plate	02			
41	Humidity Control Oven	01			
42	Liquid Filling Machine	01			
43	Mechanical stirrer with speed regulator	02			
44	Precision Melting point Apparatus	01			
45	Distillation Unit	01			

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II. Apparatus:

S.No	*Name*	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Ostwald's viscometer	15			
2	Stalagmometer	15			
3	Desiccator*	05			
4	Suppository moulds	20			
5	Buchner Funnels (Small, medium, large)	05 each			
6	Filtration assembly	01			
7	Permeability Cups	05			
8	Andreason's Pipette	03			
9	Lipstick moulds	10			

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

E. ***DEPARTMENT OF PHARMACEUTICAL BIOTECHNOLOGY :***

S.No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Orbital shaker incubator	01			
2	Lyophilizer (Desirable)	01			
3	Gel Electrophoresis (Vertical and Horizontal)	01			
4	Phase contrast/Trinocular Microscope	01			
5	Refrigerated Centrifuge	01			
6	Fermenters of different capacity (Desirable)	01			
7	Tissue culture station	01			
8	Laminar airflow unit	01			
9	Diagnostic kits to identify infectious agents	01			

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10	Rheometer	01			
11	Viscometer	01			
12	Micropipettes (single and multi channeled)	01 each			
13	Sonicator	01			
14	Respinometer	01			
15	BOD Incubator	01			
16	Paper Electrophoresis Unit	01			
17	Micro Centrifuge	01			
18	Incubator water bath	01			
19	Autoclave	01			
20	Refrigerator	01			
21	Filtration Assembly	01			
22	Digital pH meter	01			

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

F. ***DEPARTMENT OF PHARMACY PRACTICE :***

Equipment:

S.No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Colorimeter	2			
2	Microscope	Adequate			
3	Permanent slides (skin, kidney, pancreas, smooth muscle, liver etc.,)	Adequate			
4	Watch glass	Adequate			
5	Centrifuge	1			
6	Biochemical reagents for analysis of normal and pathological constituents in urine and blood facilities	Adequate			
7	Filtration equipment	2			

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8	Filling Machine	1			
9	Sealing Machine	1			
10	Autoclave sterilizer	1			
11	Membrane filter	1 Unit			
12	Sintered glass funnel with complete filtering assemble	Adequate			
13	Small disposable membrane filter for IV admixture filtration	Adequate			
14	Laminar air flow bench	1			
15	Vacuum pump	1			
16	Oven	1			
17	Surgical dressing	Adequate			
18	Incubator	1			
19	PH meter	1			
20	Disintegration test apparatus	1			
21	Hardness tester	1			
22	Centrifuge	1			
23	Magnetic stirrer	1			
24	Thermostatic bath	1			

NOTE:

1. Computers and Internet connection (Broadband), six computers for students with internet and staff computers as required.

2. Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and the department.

G.***CENTRAL INSTRUMENTATION ROOM :***

S.No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Colorimeter	01			
2	Digital pH meter	01			
3	UV- Visible Spectrophotometer	01			

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4	Flourimeter	01			
5	Digital Balance (1mg sensitivity)	01			
6	Nephelo Turbidity meter	01			
7	Flame Photometer	01			
8	Potentiometer	01			
9	Conductivity meter	01			
10	Fourier Transform Infra Red Spectrometer (Desirable)	01			
11	HPLC	01			
12	HPTLC (Desirable)	01			
13	Atomic Absorption and Emission spectrophotometer (Desirable)	01			
14	Biochemistry Analyzer (Desirable)	01			
15	Carbon, Hydrogen, Nitrogen Analyzer (Desirable)	01			
16	Deep Freezer (Desirable)	01			
17	Ion- Exchanger	01			
18	Lyophilizer (Desirable)	01			

Signature of the Head of the Institution Signature of the Inspectors

H. **Hospital Requirements for running Pharm D or Pharm.D. and Pharm.D. (Post Baccalaureate) courses : -**

Hospital Details

S.No.	Name/ Infrastructure	Minimum required Nos.	Provided	Remarks of the Inspectors
1	Hospital* with teaching facility Minimum 300 bedded Hospital	Nature of Hospital - Own - Teaching hospital recognised by MCI or University - Govt. Hospital not below the level of district Hospital - Corporate Hospital	☐ ☐ ☐	
2	Place for Pharmacy Practice Department+	Minimum carpet area of 3 sq.mts. per student along with consent to provide the professional manpower to support the programme.		
3	Available specialties ++	Medicine (Compulsory) (Any three of the following) • Surgery • Pediatrics • Gynecology and Obstetrics • Psychiatry • Skin and VD • Orthopedics	☐ ☐ ☐ ☐ ☐ ☐ ☐	
4	Location of the Hospital Give details.	**Within the same limits of Corporation or Municipality or Campus with Medical Faculty involvement as adjunct faculty**		

* Approval letter of the Hospital Authority to be annexed alongwith MOU.

+ Inspectors are required to personally verify the space provided at the hospital and meet the hospital administrators for interaction.

++ to be certified by the Dean/Director/Medical Supdt. of the hospital.

Signature of the Head of the Institution Signature of the Inspectors

Unit wise Medical Staff:

Unit _____ Bed strength _____ __

S. No.	Designation	Name with Date of Birth	Nature of employment Full time/part time/Hon.	UG/PG QUALIFICATION			**Experience** Date wise teaching/Professional experience with designation & Institution				
				Subject with Year of passing	Institution	University	Designation	Institution	From	To	Period

Signature of the Head of the Institution Signature of the Inspectors

Other Ancillary staff available.

- Epidemiologist
- Statistician
- Physiotherapies

Available Clinical Material:

- Average daily OPD.
- Average daily IPD.
- Average daily bed occupancy rate:
- Average daily operations: Major Minor
- Year-wise available clinical materials (during previous three years).

Intensive Care facilities

I. ICU
- No. of beds
- Equipment
- Average bed occupancy

II. ICCU
- No. of beds
- Equipment
- Average bed occupancy

III. NICU
- No. of Beds
- Equipment
- Average bed occupancy

IV. PICU
- No. of beds
- Equipment
- Average bed occupancy

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V. Dialysis
- No. of beds
- Equipment
- Average bed occupancy

Specialty clinics and services being provided by the department.

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Details for Pharm.D. student and faculty.

A. Accommodation

Faculty	Area in Sq. mtr.
Pharmacy Practice Area	
Dispensary	
Drug Information Centre	
Computer/Internet facility	

B. Library – Departmental Library standard text and references Indexing and Abstracting services for DI services should be included as separate annexure.

C. Pharmacy Practice staff details at the hospital –

Name	Qualification	Signature of Faculty

Signature of the Head of the Institution Signature of the Inspectors

STANDARD INSPECTION FORM (Pharm.D.)

TEACHING PROGRAMME/INTERNSHIP PROGRAMME.

1. Prescribed mode of admission to Scheduled Pharm.D. Course.
2. Academic Activities, please mention the frequency with which each activity is held.
   - Case presentation.
   - Journal

   Club. •

   Seminar
   - Subject

   Review •

   ADR meeting
   - Lectures (separately held for Pharm.D students)
   - Guest lectures
   - Video

   film •

   Others.

3. Log book of Pharm.D. students: Maintained/ Not maintained.
4. Whether Pharm.D. students participate in bedside counselling or not ? …….

Summary of Inspection report – (check list) to be completed by the Inspector.

Date of inspection:-

Name of Inspector:-

1	**Name of the institution**	Name and other particulars of Institution (Principal/Head)	
			Qualification detail.
			Experience:Adequate/Inadequate
			Age

Signature of the Head of the Institution Signature of the Inspectors

2	**Name of the institution**	Name and other particulars of Institution (Principal/Head)		
			Qualification detail.	
			Experience:Adequate/Inadequate	
			Age	
3	**Date of last inspection of the institution :**			
	Number of admission at B.Pharm.			
	Staff position for B.Pharm.	**Sufficient/Insufficient**		
	Other deficiency, if any	**Yes/No**		
4	**Total Teachers in the Pharmacy Practice Department (with requisite qualifications & Experience**			
	Designation	Number	Name	Total Experience
	Professors			
	Asst. Professors			
	Lecturers			
	- All teachers should be physically identified. - Detailed proforma (with photograph affixed) in respect of every teacher must be obtained signed by the concerned teacher, HOD and Head of institution - To ensure that staff is full time, paid and not working in any other institution simultaneously.			
5	**Requisite important information of the Hospital**			
	Number of department in the Hospital			
	Teaching complement in each Dept.			Full/Partial
	Total number of beds Dept. wise			
	Instruments and other expected facilities			Adequate/Inadequate
	Bed side teaching			Yes/No
	Laboratory Technician			Number and Names
	Department Research Laboratory			Yes/No
	Departmental Library – Book/Journals			Adequate/Inadequate
	Central Library – Books/Journals pertaining to the department			
6	Space for Pharmacy Practice Department at the Hospital			Adequate/Inadequate
	Indoor wards(Units/Department) & OPD space			Adequate/Inadequate
	Offices for Faculty members			Adequate/Inadequate
	Class Rooms and seminar rooms			Adequate/Inadequate
	Dept. Library in the hospital supporting Drug Information Services			
7	Clinical Material			Adequate/Inadequate
8	No of publications from the department during 3 years			
9	Examination conduct			As per norms of PCI/Not as per norms of PCI
	Standard of Examination			Satisfactory/Not satisfactory

Signature of the Head of the Institution Signature of the Inspectors

10	Year-wise number of Pharm.D students admitted and available staff during the last 5 years	Year	No. of Pharm.D students admitted	No. of staff available
	2008			
	2009			
	2010			
	2011			
	2012			
11	Other relevant facilities in the Institution			

12. **Specific remarks if any by the Inspector:** (No recommendations regarding permission/recognition be made) Give factual position only).

Signature of the Inspector

Note : **Specific mention of required facilities as per PCI norms and commensurate with the degree under consideration must be made specifying whether these are Available/Not available.**

Compliance of deficiencies reflected in last Inspection Report
Specific observations if not rectified

Observation of the Inspectors:

Signature of Inspectors:	**1.**
	2.

Note:

1. **The Inspection Team is instructed to physically verify the details and records filled up by the college in the application form submitted by the college, which is with you now and record the observations, opinions and recommendations in clear and explicit terms.**
2. **The team is requested to record their comments only after physical verification of records and details.**

Signature of the Head of the Institution Signature of the Inspectors

Name of the College : _____ _____

Date of Inspection : _____

STAFF DECLARATION FORM – 2008 – 2009.

1.(a) Name……

1.(b) Date of Birth & Age …… Photograph

1.(c) Recent Passport size photo of the Employee
Signed by Dean / Principal of the college.

1.(d) Submit Photo ID proof issued by Govt. Authorities :

Photo ID submitted :Passport copy / Driving Licence / PAN Card / Voter ID/MCI Smart ID Card/State Pharmacy Council ID.

Number …… Issued by …… Photograph

Without Photo ID, Declaration form will be rejected and will not be considered as teaching faculty.

1.(e) i. Present Designation:_____

1.(e)(i)a Certified copies of present appointment order at present institute attached.

1.(e)ii. Department_____

1.(e) iii. College: _____

1.(e) iv. City: _____

1.(e) v. Nature of appointment: Permanent / Temporary / Adhoc / Honorary / Part-time

1.(e) vi. Whether belongs to : SC / ST / OBC / Ex-service / Others.

1.(f) Residential Address of employee :

_____

_____

_____

1.(g) **Copy of Passport /Voter Card / Ration Card / Electricity Bill / Driving License Attached as a proof of residence.**

1.(h) Phone & Fax Number With Code: Office: _____

Residence: _____

E-mail address: _____

Mobile Number : _____

1.(i) Date of joining present institution : _____as _____

1.(i)a Joining report at the present institute attached.

2. Qualifications :

Qualification	College & Univ.	Year	Registration No. with SPC	Name of the State Pharmacy Council
B.Pharm				
M.Pharm				
Ph.D.				

2.(a) **Copies of Degree certificates of UG and PG/and Ph.D. degree attached.**
2.(b) **Copies of valid State Pharmacy Council Registration Certificate to be attached.**

3. Details of the previous appointments/teaching experience

Designation	Department	Name of Institution	From DD/MM/YY	To DD/MM/YY	Total Experience in years & months
Lecturer					
Assistant Professor					
Associate Professor					
Professor					

4 .(a) Before joining present institution I was working at_____as _____and relieved on_____after resigning / retiring **(Relieving order is enclosed from the previous institution)**.

4 .(b) I am not working anywhere else in the State or outside the State in any capacity full-time / part-time.

Signature of the Head of the Institution Signature of the Inspectors

5. Number of Research publications in Journals during the last 3 (Three) academic years :

5 .(a) International Journals:_____

5 .(b) National Journals:_____

5 .(c) State/Other Journals:_____

6. Number of Research Projects on hand:_____

7 .(a) I am having PAN Card and my PAN No. is_____/ I am not having PAN Card.

7 .(b) I have drawn total emoluments from this college as under:-

	Amount Received	**TDS**
July, 2008		
August, 2008		
September, 2008		
October, 2008		
November, 2008		
December, 2008		
January, 2009		
February, 2009		
March, 2009		
April, 2009		
May, 2009		
June, 2009		

7 .(c) (Copy of my PAN & Form 16 (TDS certificate) for financial year_____are attached)

Declaration

1. I have not worked at any other Pharmacy college/Industry or presented myself at any inspection from October 2007 onwards till date.

2. It is declared that each statement and/or contents of this declaration and /or documents, certificates submitted alongwith the declaration form, by the undersigned are absolutely true, correct and authentic. In the event of any statement made in this declaration subsequently turning out to be incorrect or false the undersigned has understood and accepted that such misdeclaration in respect to any content of this declaration shall also be treated as a gross misconduct thereby rendering the undersigned liable for necessary disciplinary action (including removal of his name from Pharmacy Register).

Signature of the Employee:

Date: Place:

Endorsement

This endorsement is the certification that the undersigned has satisfied himself /herself about the correctness and veracity of each content of this declaration and endorses the abovementioned declaration as true and correct.

I have verified the certificates/ documents submitted by the candidate with the original certificates/ documents as submitted by the teacher to the institute and with the concerned institute and have found them to be correct and authentic.

In the event of this declaration turning out to be either incorrect or any part of this declaration subsequently turning out to be incorrect or false it is understood and accepted that the undersigned shall also be equally responsible besides the declarant himself/herself for any such misdeclaration or misstatement.

Date: Place: Countersigned by the Director/Dean/Principal

Remarks

S.No	Documents	Submitted
1.(c)	Recent Passport size photo of the Employee, Signed by Dean / Principal of the college.	**Yes / No**
1.(d)	**Photo ID proof issued by Govt. Authorities : Passport / Driving Licence / PAN Card / Voter ID/PCI Smart ID Card/State Pharmacy Council ID**	**Yes / No**
1.(e)(i)a	Certified copies of present appointment order at present institute.	**Yes/No**
1.(g)	**Copy of Passport /Voter Card / Ration Card / Electricity Bill / Driving License Attached as a proof of residence.**	**Yes / No**
1.(i)a	Joining report at the present institute.	**Yes/No**
2.	**Copies of Degree certificates B.Pharm./M.Pharm./Ph.D.**	**Yes / No**
3.	**Copy of experience certificate for all teaching appointments held before joining present institute.**	**Yes / No**
4.(a)	**Relieving order from the previous institution**.	**Yes / No**
7.(a)	**PAN Card**	**Yes / No**
7.(c)	**Form 16 (TDS certificate) for financial year 2006-2007**	**Yes / No**

Signed by the Teacher : **Countersigned by Dean / Principal.**

Date : **Date :**

Signed by the Inspector : **Date :**

NOTE :

1. **The Declaration Form will not be accepted and the person will not be counted as teacher if any of the above documents are not enclosed / attached with the Declaration Form.**
2. **The person will not be counted as a teachers if the original of Photo ID proof, Registration Certificates / Degree certificates / PAN Card are not produced for verification at the time of inspection.**

Signature of the Head of the Institution Signature of the Inspectors

PHARMACY COUNCIL OF INDIA

(SIF-E)

Standard Inspection Form-E (SIF-E) for M.Pharm course

(To be submitted to PCI by an authority seeking approval)

To be filled up by inspectors

a) Name of the Inspectors: (Block letters)

1. _____

2. _____

b) Date of Inspection:

_____

PART – I

A - DETAILS OF APPLICATION

A – 1.1 Application is for -

• Permission to start M.Pharm course. • First time approval u/s 12. • Extension of approval. • Increase in intake upto 15 seats.	☐ ☐ ☐ ☐ Please tick (✓) the relevant box.

PART – II

B - GENERAL INFORMATION

To be filled by institution

B – 1.1
Name of the Institution: _____

Complete postal address:	_____ _____ STD Code : _____ T.No. : _____ Fax No. : _____ E.Mail: _____ Website : _____

B – 1.1 a) Whether the Jan Aushadhi Medical Store has been opened by your institution	Yes / No (Please tick (✓) the relevant portion)

B – 1.2 - Course conducting body: • Status - Central Govt. - State Govt. - Union Territory - Autonomous body - Society - Trust	☐ ☐ ☐ ☐ ☐ ☐ Please tick (✓) the relevant box.
B – 1.3 Name of the Society/Trust/ Management Complete postal address:	_____ _____ _____ STD Code : _____ T.No. : _____ Fax No. : _____ E.Mail: _____ Website : _____
B – 1.4 Name of the Examining Authority Complete postal address:	_____ _____ _____ STD Code : _____ T.No. : _____ Fax No. : _____ E.Mail: _____ Website : _____
B – 1.5 Other courses run by the institution - D.Pharm - B.Pharm - Pharm.D.	Approval status _____ _____ _____

Signature of the Head of the Institution with date

Signature of the Inspectors with dates

B – 1.6 M.Pharm specializations run / proposed to be run by an institution -

Name of specialization	**Year of start**	**No. of admissions**	**Remarks of the Inspectors**
Pharmaceutics			
Industrial Pharmacy			
Pharmaceutical Technology			
Pharmaceutical Chemistry			
Pharmaceutical Analysis			
Pharmaceutical Quality Assurance			
Regulatory Affairs			
Pharmaceutical Biotechnology			
Pharmacy Practice			
Pharmacology			
Pharmacognosy			
Phytopharmacy and Phytomedicine			
Others ***** if any, (please specify)			
***** M.Pharm specializations started prior to commencement of the Master of Pharmacy (M.Pharm) course Regulations, 2014 can continue only till the students admitted complete the said specialization.			

Signature of the Head of the Institution with date

Signature of the Inspectors with dates

PART- III
PHYSICAL INFRASTRUCTURE

1. Accommodation

a. Availability of land for the pharmacy college : _____ acres

b. Building : **Own/ Leased/Rented** (enclose documentary evidence as Annexure-A)

c. Built up Area of the college building : _____Sq.m.

2. Class rooms

Name of the course	No. Required	No. Available	Area required for each class room (Sq.m.)	Available (Sq.m.)	Remarks of the Inspectors
B.Pharm	4		75 (essential) 90 (desirable)		
M.Pharm Specialization -					
Pharmaceutics	1		36		
Industrial Pharmacy	1		36		
Pharmaceutical Technology	1		36		
Pharmaceutical Chemistry	1		36		
Pharmaceutical Analysis	1		36		
Pharmaceutical Quality Assurance	1		36		
Regulatory Affairs	1		36		
Pharmaceutical Biotechnology	1		36		
Pharmacy Practice	1		36		
Pharmacology	1		36		
Pharmacognosy	1		36		
Phytopharmacy and Phytomedicine	1		36		

Signature of the Head of the Institution with date

Signature of the Inspectors with dates

3. Laboratory

Name of the course	No. Required	No. Available	Area required for each laboratory (Sq.m.)	Available (Sq.m.)	Remarks of the Inspectors
B.Pharm -					
Pharmaceutics Lab.	2		75 (essential) 90 (desirable)		
Pharmaceutical Chemistry Lab.	2		75 (essential) 90 (desirable)		
Pharmaceutical Analysis Lab.	1		75 (essential) 90 (desirable)		
Pharmacology Lab.	2		75 (essential) 90 (desirable)		
Pharmacognosy Pharmaceutical Biotechnology (Including Aseptic Room) Lab.	1		75 (essential) 90 (desirable)		
M.Pharm Specialization -					
Pharmaceutics	1		75 each		
Industrial Pharmacy	1		75 each		
Pharmaceutical Technology	1		75 each		
Pharmaceutical Chemistry	1		75 each		
Pharmaceutical Analysis	1		75 each		
Pharmaceutical Quality Assurance	1		75 each		
Regulatory Affairs	1		75 each		
Pharmaceutical Biotechnology	1		75 each		
Pharmacy Practice	1		75 each		
Pharmacology	1		75 each		
Pharmacognosy	1		75 each		
Phytopharmacy and Phytomedicine	1		75 each		

Preparation room with minimum 10 sq.m. with each lab. is required.

Signature of the Head of the Institution with date

Signature of the Inspectors with dates

4. Other Facilities

Facility for B.Pharm and M.Pharm	No. Required	No. Available	Area required (Sq.m.)	Available (Sq.m.)	Remarks of the Inspectors
Machine Room	1		80 - 100		
Central Instrumentation Room	1		80		
Store Room-I	1		100		
Store Room-II	1		20		
Animal House			80		
Library			150		
Museum			50		
Auditorium / Multi Purpose Hall (Desirable) 250-300 seating capacity					
Seminar Hall					
Herbal Garden (Desirable)					
Computer (Latest Configuration) With Internet Browsing Facility	1 system for every 6 students (for M.Pharm course) 1 system for every 10 students (for B.Pharm course)				
Printers	1 Printer for every 6 computers (for M.Pharm course) 1 Printer for every 10 computers (for B.Pharm course)				
Multi Media Projector	3 (1 for B.Pharm course, 1 for M.Pharm course and 1 for Library)				
Generator (5KVA)	01				
Girl's Common Room (Essential)			20		
Boy's Common Room			10		
Toilet Blocks for Boys					

Signature of the Head of the Institution with date

Signature of the Inspectors with dates

Facility for B.Pharm and M.Pharm	No. Required	No. Available	Area required (Sq.m.)	Available (Sq.m.)	Remarks of the Inspectors
Toilet Blocks for Girls					
Drinking Water facility – Water Cooler					
Boy's Hostel (Desirable)					
Girl's Hostel (Desirable)					
Power Backup Provision					

5. Administrative Area for B.Pharm and M.Pharm

Facility for B.Pharm and M.Pharm	No. Required	No. Available	Area required (Sq.m.)	Available (Sq.m.)	Remarks of the Inspectors
Principal's Chamber	1		75 (essential) 90 (desirable)		
Office – I - Establishment	1		75		
Office – II - Academics	1		80-100		
Confidential Room	1		80		
Store Room – I	1		100		
Store Room – II	1		20		
H.O.D Room	1		20 Sq.m. Per Faculty		
Faculty Rooms			10 Sq.m. Per Faculty		

6. Library facilities for B.Pharm and M.Pharm

Item	Ref. Titles (No)	Available	Remarks of the Inspectors
Books (1500 adequate coverage of a large number of standard text books and titles in all disciplines of pharmacy)	150		
Annual addition of Books	150		
Periodicals Hard copies /online	10 National 05 International periodicals		
CDs	Adequate Nos		
Reprographic Facilities: Photo Copier Scanner	01 each		

Signature of the Head of the Institution with date

Signature of the Inspectors with dates

7. Non-teaching staff

Designation	No. Required	No. Available	Qualification Required	Qualification Available	Remarks of the Inspectors
Laboratory Technician	1 for each Dept		D. Pharm		
Laboratory Assistants or Laboratory Attenders	1 for each Lab (minimum)		SSLC		
Office Superintendent	1		Degree		
Accountant	1		Degree		
Store keeper	1		D.Pharm or a Bachelor degree.		
Computer Data Operator	1		BCA or Graduate with Computer Course		
Office Staff I	1		Degree		
Office Staff II	2		Degree		
Peon	2		SSLC		
Cleaning personnel	Adequate		---		
Gardener	Adequate		---		

8. Teaching Staff

For institution running B.Pharm and M.Pharm

For B.Pharm

Designation	Qualification Required	Qualification Available	Experience Required	Experience Available	Remarks of the Inspectors
Director/Principal/ Head of Institution	First Class B.Pharm with Master's degree in Pharmacy (M.Pharm) in appropriate branch of specialization in Pharmacy or Pharm.D (Qualifications must be PCI recognized). With Ph.D degree in any of Pharmacy subjects.		**Essential** 15 years experience in teaching or research out of which 5 years must be as Professor/HOD in a PCI approved/ recognized pharmacy college. **Desirable** Administrative experience in a responsible position		

Signature of the Head of the Institution with date

Signature of the Inspectors with dates

Department	Designation	No. required for 60 seats	No. available	No. required for 100 seats	No. available	Remarks of the Inspectors
Pharmaceutics	Professor/ Associate Professor	1		1		
	Asst. Professor	1		2		
	Lecturer	2		3		
Pharmaceutical Chemistry including Pharmaceutical analysis	Professor/ Associate Professor	1		1		
	Asst. Professor	1		2		
	Lecturer	3		3		
Pharmacology	Professor/ Associate Professor	1		1		
	Asst. Professor	1		1		
	Lecturer	2		3		
Pharmacognosy	Professor/ Associate Professor	1		1		
	Asst. Professor	1		1		
	Lecturer	1		1		
Pharmacy Practice & related subjects	Professor/ Associate Professor	-		1		
	Asst. Professor	1		1		
	Lecturer	1		1		

Additional staff required for M.Pharm per specialization

i) In addition to the minimum requirement of staff for conduct of the B.Pharm and Pharm.D Courses (if the institution is also conducting Pharm.D programme) the department in which the M.Pharm Course is being introduced shall have two additional staff who shall be PG teachers per specialization and the department should have minimum of 5 faculty in the said department.

ii) The number seats approved for admission to the M.Pharm course shall be 3 students per PG teacher (1:3)

iii) Teaching workload for UG/PG teacher shall not be more than 16 hours per week at any given time inclusive of all the teaching assignment.

Department	Designation	No. available	Remarks of the Inspectors
Department of Pharmaceutics	Asso. Prof.		
	Asst. Professor/Lecturer		
Department of Pharmaceutical Chemistry	Asso. Prof.		
	Asst. Professor/Lecturer		

Signature of the Head of the Institution with date

Signature of the Inspectors with dates

Department	**Designation**	**No. available**	**Remarks of the Inspectors**
Department of Pharmacology	Asso. Prof.		
	Asst. Professor/Lecturer		
Department of Pharmacognosy	Asso. Prof.		
	Asst. Professor/Lecturer		
Department of Pharmacy Practice	Asso. Prof.		
	Asst. Professor/Lecturer		
Department of Industrial Pharmacy	Asso. Prof.		
	Asst. Professor/Lecturer		
Department of Pharmaceutical Technology	Asso. Prof.		
	Asst. Professor/Lecturer		
Department of Pharmaceutical Analysis	Asso. Prof.		
	Asst. Professor/Lecturer		
Pharmaceutical Quality Assurance	Asso. Prof.		
	Asst. Professor/Lecturer		
Department of Regulatory Affairs	Asso. Prof.		
	Asst. Professor/Lecturer		
Department of Pharmaceutical Biotechnology	Asso. Prof.		
	Asst. Professor/Lecturer		
Department of Phytopharmacy & Phytomedicine	Asso. Prof.		
	Asst. Professor/Lecturer		

Signature of the Head of the Institution with date

Signature of the Inspectors with dates

Faculty details

Designation	Qualification Required	Experience Required	Remarks of the Inspectors
Professor	First Class B.Pharm with Master's degree in Pharmacy (M.Pharm) in appropriate branch of specialization in Pharmacy or Pharm.D (Qualifications must be PCI recognized). With Ph.D degree in any of Pharmacy subjects (Ph.D. Qualifications must be PCI recognized).	**Essential** 10 years experience in teaching in PCI approved/ recognized Pharmacy College or research experience out of which 5 years must be as Associate Professor in PCI approved/recognized Pharmacy College.	

S.No.	Name of Professor	Qualification Available	Experience Available	Remarks of the Inspectors
1.				
2.				
3.				
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6.				
7.				
8.				
9.				
10.				

Signature of the Head of the Institution with date

Signature of the Inspectors with dates

Designation	Qualification Required	Experience Required	Remarks of the Inspectors
Associate Professor	First Class B.Pharm with Master's degree in Pharmacy (M.Pharm) in appropriate branch of specialization in Pharmacy (Qualification must be PCI recognized). A PCI recognized Pharm.D degree holder shall also be eligible for the posts of Associate Professor in the subjects of pathophysiology, pharmacology and pharmacy practice. Associate Professor shall acquire PCI recognized Ph.D in any of Pharmacy subjects within 7 years to become eligible for the post of Professor.	3 years experience in teaching or research at the level of Assistant Professor or equivalent in PCI approved / recognized Pharmacy College.	

S.No.	Name of Associate Professor	Qualification Available	Experience Available	Remarks of the Inspectors
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9.				
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Signature of the Head of the Institution with date

Signature of the Inspectors with dates

Designation	Qualification Required	Experience Required	Remarks of the Inspectors
Lecturer/Assistant Professor	First Class B.Pharm with Master's degree in Pharmacy (M.Pharm) in appropriate branch of specialization in Pharmacy (Qualification must be PCI recognized). A PCI recognized Pharm.D degree holder shall also be eligible for the posts of Lecturer/Assistant Professor in the subjects of pathophysiology, pharmacology and pharmacy practice.	A lecturer will be re-designated as Assistant Professor after 2 years of teaching experience in PCI approved/recognized Pharmacy College.	

S.No.	Name of Lecturer/ Assistant Professor	Qualification Available	Experience Available	Remarks of the Inspectors
1.				
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9.				
10.				

Signature of the Head of the Institution with date

Signature of the Inspectors with dates

PHARMACY COUNCIL OF INDIA

STAFF DECLARATION FORM

From

Teacher's Name .....
(as on University Degree certificate)

Recent Passport size photo of the Employee
Signed by Dean/Principal of the College.

Photograph

Date of Birth & Age .....

Qualification	College & University	Year	Registration No. with State Pharmacy Council	Name of the State Pharmacy Council
B.Pharm				
M.Pharm				
(Ph.D.)/others				

Copies of Registration Certificate and University degree/PG/Ph.D. be attached.

Present Designation : _____

Department : _____

College : _____

City : _____

Nature of appointment : Permanent/Temporary/Adhoc/Honorary/Part-time

Whether belongs to : O.G./SC/ST/OBC/Ex-service/Others

Contd. on page 2

Signature of the Head of the Institution with date

Signature of the Inspectors with dates

Permanent Residential
Address of employee : _____

_____

_____

Copy of Passport/Voter Card/Ration Card/PAN No./Electricity Bill/Driving License Attached as a proof of residence.

STD Code Phone No.

Phone & Fax Number with Code Office : _____

Residence : _____

E-mail address : _____

Date of joining present institution : _____ as _____
(Designation)

Details of the previous appointments/teaching experience

Position	Name of Institution	From	To	Total Experience in years
Lecturer				
Reader/ Assistant Professor				
Professor				
Principal				

1) Before joining present institution I was working at _____ as _____ and relieved on _____ after resigning/retiring **(relieving order is enclosed from the previous institution).**

2) I, hereby undertake that I have not given my name as teaching faculty in any other Pharmacy institution for teaching any Pharmacy course and not working in any where other than this institution Pharmacy College/Medical College/Dental College/Industry/Community Pharmacy/Hospital Pharmacy/Govt. Service/any other service in the State or outside the State in any capacity full-time/part-time other than the above.

Contd. on page 3

Signature of the Head of the Institution with date

Signature of the Inspectors with dates

3) I have drawn total emoluments from this college as under (Please fill the data of last academic session) :-

	Amount Received	TDS
April, 20__		
May, 20__		
June, 20__		
July, 20__		
August, 20__		
September, 20__		
October, 20__		
November, 20__		
December, 20__		
January, 20__		
February, 20__		
March, 20__		

(Copy of my form 16 (TDS certificate) for the last financial year is attached)

P.A.N. : _____ Circle : _____

Declaration

1. I have not worked at any other pharmacy college/institution or presented myself at any inspection during my employment in this college.

2. It is declared that each statement and/or contents of this declaration made by the undersigned are absolutely true and correct. In the event of any statement made in this declaration subsequently turning out to be incorrect or false the undersigned has understood and accepted that such misdeclaration in respect to any content of this declaration shall also be treated as a gross misconduct thereby rendering the undersigned liable for necessary disciplinary action (including removal of his name from Register of Registered Pharmacists).

Signature of the Employee:

Date : Place:

Endorsement

This endorsement is the certification that the undersigned has satisfied himself/herself about the correctness and veracity of each content of this declaration and endorses the abovementioned declaration as true and correct. In the event of this declaration turning out to be either incorrect or any part of this declaration subsequently turning out to be incorrect or false it is understood and accepted that the undersigned shall also be equally responsible besides the declarant himself/herself for any such misdeclaration or misstatement.

Countersigned by the Director/Dean/
Principal in respect of Teaching Staff

Date : Place :

Signature of the Head of the Institution with date

Signature of the Inspectors with dates

रजिस्ट्री सं० डी० एल०-33004/99 REGD. NO. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

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भारतीय भेषजी परिषद्

अधिसूचना

नई दिल्ली, 11 नवम्बर, 2014

सं. 14-163/2010-भा.भे.परि.—भेषजी अधिनियम, 1948 (1948 का 8) की धारा 10 और 18 द्वारा प्रदत शक्तियों का प्रयोग करते हुए भारतीय भेषजी परिषद्, केन्द्रीय सरकार के अनुमोदन से निम्नलिखित विनियम बनाती है, अर्थात्—

1. संक्षिप्त नाम तथा प्रारम्भ-

- इन विनियमों को "भेषजी संस्थानों में शिक्षकों की न्यूनतम योग्यता विनियम, 2014" कहा जाएगा।
- ये सरकारी राजपत्र में प्रकाशित होने की तारीख से लागू होंगे।

2. उद्देश्य -

- भेषजी संस्थानों के विभिन्न विभागों द्वारा डिप्लोमा, स्नातक एवं स्नातकोत्तर स्तर पर प्रदान की जा रही शिक्षा के स्तर को बनाए रखने के लिए भेषजी शिक्षकों की नियुक्ति के लिए निर्धारित योग्यताएं एवं अनुभव।

3. शिक्षक की नियुक्ति के लिए न्यूनतम योग्यताएं—

- डिप्लोमा, स्नातक एवं स्नातकोत्तर शिक्षा प्रदान करने वाले भेषजी कॉलेजों अथवा संस्थानों के विभिन्न विभागों में शिक्षकों की नियुक्ति के लिए न्यूनतम योग्यताएं तथा अनुभव भारतीय भेषजी परिषद् द्वारा समय-समय पर निर्धारित की जाएंगी जो वर्तमान में निम्नलिखित अनुसूची के अनुसार निर्धारित है :—

अनुसूची

प्रत्येक नियोक्ता प्राधिकरण, भेषजी महाविद्यालय अथवा संस्थान में, शिक्षक के पद पर नियुक्ति से पूर्व निम्नलिखित मानदण्डों का पालन करेगा -

(i) सभी भेषजी शिक्षक भेषजी अधिनियम, 1948 की धारा 12 के अंतर्गत भारतीय भेषजी परिषद् द्वारा अनुमोदित परीक्षा प्राधिकरण (विश्वविद्यालय) से प्राप्त भारतीय भेषजी परिषद् द्वारा मान्य बुनियादी भेषजी उपाधि रखते हों ;

(ii) अभ्यर्थी राज्य भेषजी परिषद् के भेषज पंजीकरण रजिस्टर में पंजीकृत होना चाहिए;

(iii) नियोक्ता प्राधिकरण, भारतीय भेषजी परिषद् द्वारा समय-समय पर अनुमोदित एवं अधिसूचित समतुल्य योग्यता प्राप्त अभ्यर्थियों के अभ्यर्थीकरण पर भी विचार कर सकता है।

(iv) शैक्षणिक पदों के नाम, शैक्षणिक योग्यताऐं एवं अध्यापन/अनुसंधान/औद्योगिक अनुभव जो शैक्षणिक पदों के लिए आवश्यक हैं, अनुसूची की तालिका में दर्शाये गये हैं।

(v) सभी शैक्षणिक संकाय पूर्णकालिक होने चाहिए सिवाय गणित एवं सांख्यिकी, बेसिक इलैक्ट्रोनिक्स, कम्प्यूटर ऐपलिकेशन, फार्मास्यूटिकल बिजिनेस मैनेजमैन्ट, इंजिनियरिंग ड्राईंग और पैथोलोजी इत्यादि जहां अंशकालिक शैक्षिणक स्टाफ की अनुमति होगी।

(vi) भारतीय भेषजी परिषद् द्वारा मान्य एम.फार्म./फार्म.डी या विद्यावाचस्पति की योग्यता रखने वाले केवल वही शिक्षक जिन्होंने बी.फार्म पाठ्यक्रम की पढ़ाई भारतीय भेषजी परिषद् द्वारा भेषजी अधिनियम, 1948 की धारा 12 के अंतर्गत अनुमोदित संस्थान से की है, भेषजी शिक्षक समझे जाएंगे।

(vii) केवल वही शिक्षक जो एम.फार्म./फार्म.डी पास करने के बाद किसी अनुमोदित/मान्यताप्राप्त कॉलेज में कम से कम पांच वर्ष का अध्यापन अनुभव अथवा विद्यावाचस्पति के बाद तीन वर्ष का अध्यापन अनुभव रखते हों, स्नातकोत्तर भेषजी शिक्षक समझे जाएंगे।

(viii) भेषजी विभागों/कॉलेजों/संस्थानों में कार्य कर रहे शिक्षण संकाय के वेतनमान राज्य सरकार/विश्वविद्यालय अनुदान आयोग/अखिल भारतीय तकनीकी शिक्षा परिषद् द्वारा समान श्रेणी के पदों के लिए निर्धारित वेतनमान से कम नहीं होंगे।

(ix) कोई भी शिक्षक जो किसी अनाचार या दुर्व्यवहार अथवा अनैतिक कार्य में लिप्त पाया जाता है उसे भारतीय भेषजी परिषद् द्वारा अनुमोदित संस्थान में अध्यापन से तीन साल के लिए बहिष्कृत किया जाएगा। इसकी एक रिपोर्ट, भेषजी अधिनियम, 1948 की धारा 36 के अंतर्गत कार्यवाही के लिए राज्य भेषजी परिषद् को भी भेजी जाएगी।

(x) शिक्षक जो एक ही समय में एक जगह से अधिक जगह कार्य करेगा उसके विरूद्ध निम्नलिखित अनुशासनात्मक कार्यवाही की जाएगी –

(क) यदि वह एक से अधिक भेषजी संस्थानों में शैक्षणिक कार्य करता हुआ पाया जाएगा तो उसे भारतीय भेषजी परिषद् द्वारा अनुमोदित भेषजी संस्थान में अध्यापन से तीन साल के लिए बहिष्कृत किया जाएगा तथा भारतीय भेषजी परिषद् द्वारा उसे शिक्षक/स्नातकोत्तर शिक्षक के रूप मे मिली मान्यता वापस ले ली जाएगी।

(ख) यदि वह भेषजिक उद्यम/विक्रय अथवा भेषजी संस्थान और उद्यम के किसी विभाग में कार्य करता पाया जाता है तो इसकी रिपोर्ट केन्द्रीय/राज्य औषधि नियंत्रण विभाग को ड्रग्स एण्ड कॉस्मैटिक्स एक्ट, 1940 के अंतर्गत कार्यवाही के लिए भेजी जाएगी।

(ग) यदि वह समुन्द्रपार किसी एजेंसी में कार्यरत है तो उसकी एक रिपोर्ट विदेश मामलों के मंत्रालय को उपयुक्त कार्यवाही के लिए भेजी जाएगी।

(घ) ऐसे सभी मामले राज्य भेषजी परिषद् को भेषजी अधिनियम, 1948 की धारा 36 के अंतर्गत नाम हटाने की कार्यवाही हेतु भेजे जाएंगे।

(xi) नियोक्ता भेषजी संस्थान यह सुनिश्चित करेंगे कि उनके द्वारा नियुक्त कोई भी शिक्षक एक ही समय में एक से अधिक जगह कार्य नहीं कर रहा है। इस संबंध में यदि भेषजी संस्थान स्टाफ डिक्लेरेशन फार्म में गलत जानकारी भरता है तो भेषजी अधिनियम, 1948 की धारा 13 के अंतर्गत उसके विरूद्ध कार्यवाही की जाएगी।

(xii) एक भेषजी शिक्षक किसी भेषजी कॉलेज में एक शैक्षणिक सत्र (1 जुलाई से अगले क्लैन्डर वर्ष 30 जून तक) में एक बार ही शिक्षक गिना जाएगा। जो व्यक्ति पहले ही किसी भेषजी कॉलेज के शैक्षणिक सत्र विशेष में एक बार शिक्षक गिना जा चुका है वह दुबारा भेषजी शिक्षक के रूप में किसी अन्य भेषजी संस्थान में उसी शैक्षणिक सत्र में शिक्षक नही गिना जाएगा।

तालिका

भेषजी महाविद्यालयों/संस्थानों में शैक्षणिक पदों के लिए न्यूनतम शैक्षणिक योग्यताएं, अध्यापन, अनुसंधान एवं उद्यम अनुभव की न्यूनतम आवश्यकताएं

I. डिप्लोमा पाठ्यक्रमः

पद का नाम	शैक्षणिक योग्यता	अध्यापन/अनुसंधान/उद्यम अनुभव
प्राचार्य/निदेशक/संस्थान प्रमुख/ विभागाध्यक्ष	भेषजिक विज्ञान के किसी विषय में भारतीय भेषजी परिषद् द्वारा मान्य स्नाकोत्तर योग्यता अथवा भारतीय भेषजी परिषद् द्वारा मान्य फार्म.डी योग्यता	**आवश्यक** भारतीय भेषजी परिषद् द्वारा अनुमोदित/मान्यता प्राप्त भेषजी महाविद्यालय में 5 वर्ष का अध्यापन अनुभव।

		वांछनीय किसी जिम्मेदारी के पद पर प्रशासनिक कार्य का अनुभव
प्रवक्ता **(भेषजी विषय)**	भारतीय भेषजी परिषद् द्वारा मान्य एम.फार्म./फार्म.डी अथवा भारतीय भेषजी परिषद् द्वारा मान्य बी.फार्म. (i) एक व्यक्ति जिसके पास एम.बी.बी.एस की योग्यता है उसे अनाटॉमी एण्ड फिजियोलॉजी तथा बॉयो-केमिस्ट्री एण्ड क्लिनिकल पैथोलॉजी विषयों के लिए प्रवक्ता के पद पर विचार किया जा सकता है। (ii) एक व्यक्ति जिसके पास एम.एस.सी. (गणित) की उपाधि है अंशकालिक प्रवक्ता (गणित) के पद के योग्य होगा।	—— **आवश्यक** 3 वर्ष का व्यावसायिक अनुभव।
	(iii) एक व्यक्ति जिसके पास एम.एस.सी. (जूलॉजी) अथवा एम.एस.सी.(बॉटनी) की उपाधि है अंशकालिक प्रवक्ता (बॉयोलॉजी) के पद के लिए योग्य होगा। (iv) एक व्यक्ति जिसके पास बी.ई.(सी.एस.) अथवा एम.सी.ए. की उपाधि है अंशकालिक प्रवक्ता (संगणक विज्ञान) के पद के योग्य होगा।	

II. बी.फार्म/फार्म.डी/स्नाकोत्तर भेषजी पाठ्यक्रय –

निदेशक/प्राचार्य/संस्थान प्रमुख	प्रथम श्रेणी में बी.फार्म उपाधि के साथ भेषजी में विशेषज्ञता की संगत शाखा में स्नाकोत्तर उपाधि (एम.फार्म) या फार्म.डी (योग्यता भारतीय भेषजी परिषद् द्वारा मान्य होनी चाहिए) के साथ भेषजी के किसी भी विषय में विद्यावाचस्पति की उपाधि (विद्यावाचस्पति की उपाधि भारतीय भेषजी परिषद् द्वारा मान्य होनी चाहिए)।	**आवश्यक** भारतीय भेषजी परिषद् द्वारा अनुमोदित/मान्यता प्राप्त भेषजी महाविद्यालय में आचार्य/विभागाध्यक्ष के रूप में 5 वर्ष के साथ कुल 15 वर्ष का अध्यापन अथवा अनुसंधान कार्य का अनुभव। **वांछनीय** किसी जिम्मेदारी के पद पर प्रशासनिक कार्य का अनुभव।
आचार्य	प्रथम श्रेणी में बी.फार्म उपाधि के साथ भेषजी में विशेषज्ञता की संगत शाखा में स्नाकोत्तर उपाधि (एम.फार्म) या फार्म.डी (योग्यता भारतीय भेषजी परिषद् द्वारा मान्य होनी चाहिए) के साथ भेषजी के किसी भी विषय में विद्यावाचस्पति की उपाधि (विद्यावाचस्पति की उपाधि भारतीय भेषजी परिषद् द्वारा मान्य होनी चाहिए)।	**आवश्यक** भारतीय भेषजी परिषद् द्वारा अनुमोदित/मान्यता प्राप्त भेषजी महाविद्यालय में सह आचार्य के रूप में 5 वर्ष के साथ कुल 10 वर्ष का अध्यापन अथवा अनुसंधान कार्य का अनुभव।
सह-आचार्य	प्रथम श्रेणी में बी.फार्म उपाधि के साथ भेषजी विशेषज्ञता की संगत शाखा में स्नाकोत्तर उपाधि (एम.फार्म) (योग्यता भारतीय भेषजी परिषद् द्वारा मान्य होनी चाहिए)। भारतीय भेषजी परिषद् द्वारा मान्य फार्म.डी की उपाधि धारक भी पैथोफिजियोलॉजी, फार्माकोलॉजी और फार्मेसी प्रैक्टिस विषयों में सह आचार्य के पद के लिए योग्य होगा। आचार्य के पद की पात्रता के लिए सह आचार्य को 7 वर्ष के अन्दर भेषजी के किसी भी विषय में	भारतीय भेषजी परिषद् द्वारा अनुमोदित/मान्यता प्राप्त भेषजी महाविद्यालय में सहायक आचार्य या समतुल्य के रूप में 3 वर्ष का अध्यापन अथवा अनुसंधान का अनुभव।

	भारतीय भेषजी परिषद् द्वारा मान्य विद्यावाचस्पति की उपाधि प्राप्त करनी होगी।	
प्रवक्ता/सहायक आचार्य	प्रथम श्रेणी में बी.फार्म उपाधि के साथ भेषजी विशेषज्ञता की संगत शाखा में स्नाकोत्तर उपाधि (एम.फार्म) (योग्यता भारतीय भेषजी परिषद् द्वारा मान्य होनी चाहिए)। भारतीय भेषजी परिषद् द्वारा मान्य फार्म.डी उपाधि धारक भी पैथोफिजियोलॉजी, फार्माकॉलोजी और भेषजी प्रैक्टिस विषयों के लिए प्रवक्ता/सहायक आचार्य के पद के लिए योग्य होगा।	भारतीय भेषजी परिषद् द्वारा अनुमोदित/मान्यता प्राप्त भेषजी महाविद्यालय में 2 वर्ष के अध्यापन अनुभव के बाद प्रवक्ता को सहायक आचार्य के रूप में रि-डैजिगनेट किया जाएगा।

टिप्पणीः (i) शिक्षा अधिनियम, 1991, फार्म.डी विनियम 2008 अथवा भारतीय भेषजी परिषद् द्वारा अनुमोदित अन्य दस्तावेजों में निहित बातों के होते हुए भी, भेषजी शिक्षण संकाय की न्यूनतम योग्यताएं तथा अनुभव इन विनियमों में उल्लेखित योग्यताओं और अनुभव के अनुसार होंगे तथा इन विनियमों के सरकारी राजपत्र में प्रकाशित होने की तारीख से प्रभावी होंगे।

(ii) नियमिति रूप से कार्य कर रही मौजूदा शिक्षण संकाय इन विनियमों से प्रभावित नहीं होगा। तथापि ऐसी शिक्षण संकाय की पदोन्नति इन विनियमों के अनुसार ही होंगी।

(iii) यदि स्नातकोत्तर स्तर पर श्रेणी या वर्ग नहीं दिया जाता, तो न्यूनतम 60% अग्रीगेट अंक या संचयी ग्रेड प्वाइन्ट औसत को प्रथम श्रेणी के समकक्ष या प्रथम श्रेणी या वर्ग, जैसा भी हो, के समतुल्य माना जायेगा।

(iv) नियमित रूप से कार्य कर रहा मौजूदा शिक्षण संकाय किसी भी अन्य भेषजी महाविद्यालय/संस्थान में उसी पद पर नियुक्त किया जा सकता है जिस पद से वे सेवानिवृति/कार्यभारमुक्त हुए थे, यद्यपि, ऐसे शिक्षकों की पदोन्नति इन विनियमों के अनुसार विनियमित होगी।

अर्चना मुदगल, निबन्धक-एवं-सचिव
[विज्ञापन III/4/असा./101/14]

PHARMACY COUNCIL OF INDIA

NOTIFICATION

New Delhi, the 11th November, 2014

No. 14-163/2010-PCI.—In exercise of the powers conferred by Sections 10 and 18 of the Pharmacy Act,1948 (8 of 1948), the Pharmacy Council of India, with the approval of the Central Government, hereby makes the following regulations; namely –

1. **Short title and commencement –**

- These regulations may be called the "Minimum Qualification for Teachers in Pharmacy Institutions Regulations, 2014".
- They shall come into force from the date of their publication in the Official Gazette.

2. **Objectives –**

- Appointment of pharmacy teachers with prescribed qualifications and experience in various departments of a pharmacy institution imparting diploma, graduate and post-graduate education to maintain the minimum standard of teaching.

3. Minimum qualifications for appointment as a teacher –

- Minimum qualification and experience for appointment as a teacher in various departments of a pharmacy college or institution imparting diploma, graduate and post-graduate education shall be as prescribed by the Pharmacy Council of India (PCI) from time to time and presently as specified in the Schedule given below –

THE SCHEDULE

Every appointing authority, before making an appointment to a teaching post in a pharmacy college or institution, shall observe the following norms –

(i) All pharmacy teachers must possess a basic degree recognized by the Pharmacy Council of India in pharmacy obtained from an examining authority (University) approved by the Pharmacy Council of India under section 12 of the Pharmacy Act, 1948;

(ii) The candidate should be registered in the register of pharmacists maintained by a State Pharmacy Council;

(iii) The appointing authority can also consider the candidatures of the holders of equivalent qualifications approved and notified by the Pharmacy Council of India from time to time.

(iv) The names of the teaching posts, academic qualifications and the teaching/research/industry experience required for each teaching post are given in the table annexed to the Schedule.

(v) All teaching faculty shall be full time except in respect of the subjects like Mathematics and Statistics, Basic Electronics, Computer Applications, Pharmaceutical Business Management, Engineering Drawing and Pathology etc. where part-time teaching staff shall be permitted.

(vi) Only those teachers with M.Pharm/Pharm.D or Ph.D qualifications recognized by the Pharmacy Council of India who have undergone B.Pharm course from an institution approved by the Pharmacy Council of India under Section 12 of the Pharmacy Act,1948 shall be recognised as pharmacy teachers.

(vii) Only those teachers who possess at least five years teaching experience obtained in approved/recognized Pharmacy College after passing M.Pharm/Pharm.D course or three years teaching experience after Ph.D shall be recognized by the PCI as post –graduate pharmacy teachers.

(viii) The scale of pay of the teaching faculty working in pharmacy departments/colleges/institutions shall not be less than the scale of pay prescribed by the State Govt./UGC /AICTE for similar category of posts.

(ix) Any teacher who is found to be involved in malpractices or guilty of misconduct or misdemeanour shall be debarred from teaching in an institution approved by the Pharmacy Council of India for a period of three years. A report in the matter shall also be sent to the State Pharmacy Council for taking action under Section 36 of the Pharmacy Act,1948.

(x) A teacher working at more than one place simultaneously shall render himself liable to disciplinary action in the following manner :—

(a) He will be derecognized as a pharmacy teacher/PG teacher by the PCI and will be debarred from teaching in a pharmacy institution approved by the PCI for a period of three years if he is found teaching in more than one pharmacy institution.

(b) A report will be sent to the Central/State Drugs Control Deptt. for taking action under the Drugs & Cosmetics Act, 1940 if he is working in a pharmaceutical industry/sales or any other department of a pharmacy institution and industry.

(c) The matter will be referred to the Ministry of External Affairs for appropriate action if he is working with any agency overseas.

(d) In all such cases, the matter will be taken up with the State Pharmacy Council for taking action under Section 36 of the Pharmacy Act,1948 for deletion of his name from the State Pharmacy Register.

(xi) The employer Pharmacy Institution shall be responsible to ensure that the faculty employed by it as teacher is not working simultaneously in any other institution. In case the employer Pharmacy institution submits false Staff Declaration Form (SDF) in this regard then action shall be taken against it under Section 13 of the Pharmacy Act, 1948.

(xii) A Pharmacy teacher shall be considered teacher in one Pharmacy College in one academic year (1st July to 30th June of next calendar year). In case the person was already considered teacher during particular academic year in any Pharmacy College, he shall not be counted/considered as teacher in other institution in same academic year.

TABLE

MINIMUM REQUIREMENTS OF ACADEMIC QUALIFICATIONS, TEACHING, RESEARCH AND INDUSTRY EXPERIENCE FOR TEACHING POSTS IN PHARMACY COLLEGES/INSTITUTIONS

I. **Diploma course:**

Name of the Post	Academic qualification	Teaching/Research/Industry Experience
Principal/Director/ Head of Instt./ Head of Deptt.	PCI recognized Post Graduate qualification in any discipline of pharmaceutical sciences. OR PCI recognized Pharm.D	**Essential** 5 years teaching experience in PCI approved/recognized Pharmacy College. **Desirable** Administrative experience in a responsible position.

Lecturer **(Pharmacy subjects)**	PCI recognized M.Pharm/ Pharm.D OR PCI recognized B.Pharm (i) A person holding M.B.B.S. qualification can be considered for the post of Lecturer in the subjects of Anatomy & Physiology and Bio-Chemistry & Clinical Pathology. (ii) A person holding M.Sc. (Maths) degree shall be eligible for the post of Lecturer (Mathematics) on part-time basis.	— **Essential** 3 years professional experience.
	(iii) A person holding M.Sc. (Zoology) or M.Sc. (Botany) degree shall be eligible for the post of Lecturer (Biology) on part-time basis. (iv) A person holding B.E.(C.S.) or MCA degree shall be eligible for the post of Lecturer(Computer Science) on part-time basis.	

II. B.Pharm /Pharm.D/Post graduate course in Pharmacy –

Director/Principal/ Head of Institution	First Class B.Pharm with Master's degree in Pharmacy (M.Pharm) in appropriate branch of specialization in Pharmacy or Pharm.D (Qualifications must be PCI recognized). With Ph.D degree in any of Pharmacy subjects (Ph.D. Qualifications must be PCI recognized).	**Essential** 15 years experience in teaching or research out of which 5 years must be as Professor/HOD in a PCI approved/ recognized pharmacy college. **Desirable** Administrative experience in a responsible position .
Professor	First Class B.Pharm with Master's degree in Pharmacy (M.Pharm) in appropriate branch of specialization in Pharmacy or Pharm.D (Qualifications must be PCI recognized). With Ph.D degree in any of Pharmacy subjects (Ph.D. Qualifications must be PCI recognized).	**Essential** 10 years experience in teaching in PCI approved/ recognized Pharmacy College or research experience out of which 5 years must be as Associate Professor in PCI approved/recognized Pharmacy College.

Associate Professor	First Class B.Pharm with Master's degree in Pharmacy (M.Pharm) in appropriate branch of specialization in Pharmacy (Qualification must be PCI recognized).	3 years experience in teaching or research at the level of Assistant Professor or equivalent in PCI approved/ recognized Pharmacy College.

	A PCI recognized Pharm.D degree holder shall also be eligible for the posts of Associate Professor in the subjects of pathophysiology, pharmacology sand pharmacy practice. Associate Professor shall acquire PCI recognized Ph.D in any of Pharmacy subjects within 7 years to become eligible for the post of Professor.	

Lecturer/Assistant Professor	First Class B.Pharm with Master's degree in Pharmacy (M.Pharm) in appropriate branch of specialization in Pharmacy (Qualification must be PCI recognized). A PCI recognized Pharm.D degree holder shall also be eligible for the posts of Lecturer/Assistant Professor in the subjects of pathophysiology, pharmacology and pharmacy practice.	A lecturer will be re-designated as Assistant Professor after 2 years of teaching experience in PCI approved/ recognized Pharmacy College.

Note:

(i) Notwithstanding anything contained in the Education Regulations, 1991, the Pharm.D Regulations, 2008 or any other documents approved by the PCI, the minimum qualification and experience for the teaching faculty in pharmacy shall be as mentioned in these regulations w.e.f. the date of their publication in the Official Gazette.

(ii) The existing teaching faculty working on regular basis shall not be affected. However, promotions of such faculty will be governed by these regulations.

(iii) If a class or division is not awarded at Master level, a minimum of 60 % marks in aggregate or equivalent cumulative grade point average shall be considered equivalent to first class or division, as the case may be.

(iv) The existing teaching faculty working on regular basis can be appointed in any other Pharmacy College/ Institution on the same post from which such faculty member retired / relieved, however, promotions of such faculty member shall be governed by these regulations.

ARCHNA MUDGAL, Registrar-cum-Secy.

[ADVT. III/4/Exty./101/14]

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