The Education Regulations, 2020 for Diploma Course in Pharmacy

Course Regulations 2020

SWAMI VIVEKANAND SUBHARTI UNIVERSITY,

MEERUT

PROGRAMME OUTCOMES

PO. 1. Pharmacy Knowledge: Graduates will acquire strong fundamental concepts and adequate scientific information regarding basic principles of pharmaceutical, biomedical; behavioral, social, administrative and manufacturing practices by which they will able to handle drugs safely and ensure the rationale use of drugs.

PO. 2. Drug development: Graduates will acquire the ability to develop and/or evaluate various pharmaceuticals and their formulations including cosmeceuticals and quality assurance of various pharmaceutical dosage forms including those of herbal origin as per standards of official monographs, WHO, and other regulatory agencies.

PO. 3. Social Awareness: Graduates will demonstrate the impact of pharmacy knowledge on the society and also will be aware of modern issues. They will create awareness of healthcare issues through interactions with others and will gain a sense of self-respect towards community and citizenship.

PO. 4. Pharmaceutical Ethics: Graduates will demonstrate knowledge of professional and ethical responsibilities as per pharmaceutical jurisprudence. They will be able to demonstrate knowledge and skills in all disciplines of Pharmaceutical sciences and develop a sound pharmaceutical care plan to manage medication-related problems. They will retrieve, evaluate, and apply current drug information in the delivery of pharmaceutical care and assure safe and accurate preparation and dispensing of medications.

PO. 5. Professional Identification: The graduates will swear by a code of ethics of Pharmacy Council of India in relation to community and shall act as integral part of a health care system. They will understand, analyze and communicate the value of their professional roles in society (e.g. health care professionals, promoters of health, educators, managers, employers, employees).

PO. 6. Analytical Skills: Graduates will develop skills in qualitative and quantitative analysis of various pharmaceuticals. They will demonstrate their skills to use modern pharmaceutical tools, software, and equipments to analyze & solve problems. Develop skills in qualitative and quantitative analysis of various pharmaceuticals.

PO. 7. Leadership Skills: Graduates will develop interpersonal skills such as influencing others, negotiating and working with others, conflict management and leading others through the problem-solving process. They will be able to lead and function both individually and as a member of a team.

PO. 8. Communication: The graduates will acquire excellent interpersonal oral communication and writing skills. Demonstrate the ability of verbal communication and writing reports and to lead the team effectively.

PO. 9. Drugs and diseases: Graduates will be able to understand different classes of drugs, their mechanism of action, dynamics, kinetics, structure activity relationships, pathophysiology and pharmacotherapeutics of various diseases.

PO.10. Problem analysis and Planning: Graduates will utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decisions during daily practice. Demonstrate effective planning abilities including time management, resource management, delegation skills and organizational skills.

PO.11 Life-long learning: Graduates will recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. Self-assess and use feedback effectively from others to identify learning needs and to satisfy these needs on an ongoing basis.

रजिस्ट्री सं. डी.एल.- 33004/99 REGD. No. D. L.-33004/99

भारत का राजपत्र
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भारतीय भेषजी परिषद

अधिसूचना

नई दिल्ली, 9 अक्टूबर, 2020

फार्मेसी (भेषजी) में डिप्लोमा कोर्स के लिए शिक्षा विनियम, २०२०

भेषजी अधिनियम, १९४८ की धारा १० के तहत विनियम।

(भारत सरकार एवं स्वास्थ्य एवं परिवार कल्याण मंत्रालय के पत्रांक **जेड**–28020/59/2019-**ए एच एस/एफ टी एस**–8012809 **दिनांक** 7.10.2020) द्वारा अनुमोदित एवं भारतीय भेषजी परिषद् द्वारा प्रकाशित)

सं. १४-५५/२०२०- भा.भे.परि. - भेषजी अधिनियम, १९४८ (१९४८ का ८) की धारा १० द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए भारतीय भेषजी परिषद केन्द्रीय सरकार के अनुमोदन से निम्नलिखित संशोधन करती है, अर्थातः-

अध्याय - १

१. संक्षिप्त शीर्षक और प्रारंभः-

(१) इन विनियमों को फार्मेसी (भेषजी) में डिप्लोमा कोर्स के लिए शिक्षा विनियम, २०२० के नाम से जाना जाएगा।

(२) ये राजपत्र में प्रकाशन की तारीख से प्रवृत्त होंगे।

२. फार्मासिस्ट के लिए योग्यताः-

फार्मेसी में डिप्लोमा (भाग-I और भाग-II) में उत्तीर्ण और फार्मेसी में डिप्लोमा (भाग-III) का संतोषजनक समापन फार्मासिस्ट के रूप में पंजीकरण के लिए आवश्यक न्यूनतम योग्यता है।

अथवा

भारतीय भेषजी परिषद द्वारा अनुमोदित उपरोक्त परीक्षा के समकक्ष कोई अन्य योग्यता।

३. फार्मेसी में डिप्लोमा (भाग-I, भाग-II और भाग-III) में अध्ययन पाठ्यक्रम को पूरा करने का एक प्रमाण पत्र शामिल होगा और अध्याय-२ और अध्याय-३ में निर्धारित इन नियमों के अनुसार प्रैक्टिकल ट्रेनिंग (व्यवहारिक प्रशिक्षण) को संतोषजनक तरीके से पूरा कर लिये जाने पर परीक्षा उत्तीर्ण की जाएगी।

अध्याय - २

४. फार्मेसी में डिप्लोमा (भाग-I तथा भाग-II):-

फार्मेसी में डिप्लोमा में प्रवेश के लिए न्यूनतम योग्यता - भौतिकी, रसायन विज्ञान और जीव विज्ञान या गणित के साथ १०+२ परीक्षा (विज्ञान शैक्षणिक स्ट्रीम) में उत्तीर्ण।

अथवा

भारतीय भेषजी परिषद द्वारा अनुमोदित उपरोक्त परीक्षा के समकक्ष कोई अन्य योग्यता।

बशर्ते कि अनुसूचित जाति और अनुसूचित जनजाति के अभ्यर्थियों के लिए केंद्र सरकार/राज्य सरकारों/ केंद्र शासित प्रदेश प्रशासनों द्वारा जारी निर्देशों के अनुसार सीटों का आरक्षण हो, समय-समय पर जैसा भी मामला हो।

५. पाठ्यक्रम की अवधिः-

(१) पाठ्यक्रम की अवधि दो शैक्षणिक वर्षों की होगी। प्रत्येक शैक्षणिक वर्ष एक सौ अस्सी कार्य दिवसों से कम की अवधि का नहीं होगा।

(२) इसके अतिरिक्त, पाँच सौ घंटे की प्रैक्टिकल ट्रेनिंग (व्यावहारिक प्रशिक्षण) तीन महीने से कम अवधि की नहीं होगी।

६. अध्ययन पाठ्यक्रम :-

फार्मेसी में डिप्लोमा भाग-I और फार्मेसी में डिप्लोमा भाग-II के अध्ययन पाठ्यक्रम में नीचे तालिका I और II में दिये गये विषय शामिल होंगे। थ्योरी और प्रैक्टिकल में इसे पढ़ाने हेतु प्रत्येक विषय के लिए उतने ही घंटों का समय दिया जायेगा जो नीचे दी गयी तालिकाओं के कॉलम २ और ३ में इसके सामने दिया गया है। हालाँकि, भारतीय भेषजी परिषद द्वारा पाठ्यक्रम और प्रैक्टिकल ट्रेनिंग में समय-समय पर परिवर्तन किया जा सकता है।

तालिका - I

फार्मेसी में डिप्लोमा (भाग I)

	घंटों की संख्या		
विषय	**थ्योरी**	**प्रैक्टिकल**	**शिक्षण**
फार्मास्यूटिक्स	७५	७५	२५
फार्मास्युटिकल रसायन शास्त्र	७५	७५	२५
फार्माकोग्नॉसी (भेषज-अभिज्ञान)	७५	७५	२५
मानव शरीर रचना विज्ञान और शरीर क्रिया विज्ञान	७५	७५	२५
सामाजिक फार्मेसी	७५	७५	२५
कुल	**३७५**	**३७५**	**१२५**

तालिका - II

फार्मेसी में डिप्लोमा (भाग **II**)

	घंटों की संख्या		
विषय	**थ्योरी**	**प्रैक्टिकल**	**शिक्षण**
फार्माकोलॉजी	७५	५०	२५
सामुदायिक फार्मेसी और प्रबंधन	७५	७५	२५
जीवरसायन एवं नैदानिक रोग विज्ञान	७५	५०	२५
फार्माकोथैरेप्यूटिक्स	७५	२५	२५
अस्पताल और नैदानिक फार्मेसी	७५	२५	२५
फार्मेसी कानून और नैतिकता	७५	-	२५
कुल	**४५०**	**२२५**	**१५०**

तालिका III

फार्मेसी में डिप्लोमा (भाग III)

प्रैक्टिकल ट्रेनिंग- ५०० घंटे

गतिविधियाँ

१) ड्रग्स और मेडिकल उपकरणों का संग्रहण (स्टॉक)

२) सूची नियंत्रण प्रक्रियाएं

३) पर्चे का रखरखाव

४) वितरण (२५० घंटे)

५) रोगी परामर्श

७. पाठ्यविवरणः-

भारतीय भेषजी परिषद द्वारा अध्ययन के प्रत्येक विषय के लिए पाठ्यविवरण समय-समय पर निर्धारित किया जाएगा।

८. अध्ययन पाठ्यक्रम का चलाने वाले को प्राधिकारी की स्वीकृतिः-

(१) किसी राज्य में कोई भी प्राधिकारी भारतीय भेषजी परिषद की पूर्व स्वीकृति के बिना फार्मेसी में डिप्लोमा अध्ययन पाठ्यक्रम शुरू या उसका संचालन नहीं करेगा।

(२) विनियमन ६ में उद्धृत नियमित शैक्षणिक अध्ययन पाठ्यक्रम ऐसे संस्थान में चलाया जायेगा, जिसे भेषजी अधिनियम, १९४८ की धारा १२ की उपधारा (१) के तहत भारतीय भेषजी परिषद द्वारा मान्यता प्राप्त है।

विदित हो कि भारतीय भेषजी परिषद इस विनियमन के तहत किसी भी ऐसे संस्थान को तब तक मान्यता नहीं देगा, जब तक कि संबंधित संस्थान द्वारा भवन, आवास, उपकरण व अध्यापकगण आदि की दृष्टि से शिक्षण हेतु पर्याप्त व्यवस्था प्रदान नहीं कर दी जाती, जैसा कि इन विनियमनों के परिशिष्ट-क में दिया गया है। भारतीय भेषजी परिषद द्वारा इन विनियमनों में समय-समय पर परिवर्तन किया जा सकता है।

९. परीक्षाएंः-

(१) वार्षिक परीक्षा शैक्षणिक वर्ष के अंत में होगी।

(२) परीक्षा प्राधिकारी द्वारा निर्दिष्ट मानदंडों के अनुसार जैसा भी मामला हो, जो छात्र फार्मेसी में डिप्लोमा भाग-I या भाग-II उत्तीर्ण करने में सक्षम नहीं है यदि आवश्यक हो, तो उनके लिए एक पूरक (सप्लीमेंटरी) परीक्षा होगी ।

(३) परीक्षाएँ लिखित और प्रैक्टिकल (मौखिक सहित) होंगी, विषय के प्रत्येक खंड के लिए निर्धारित अधिकतम अंक नीचे दी गयी तालिका IV और V में दिया गया है।

तालिका – IV

फार्मेसी में डिप्लोमा (भाग-I) परीक्षा

	थ्योरी के लिए अधिकतम अंक			**प्रैक्टिकल के लिए अधिकतम अंक**		
विषय	**परीक्षा**	***सत्रात्मक**	**कुल**	**परीक्षा**	***सत्रात्मक**	**कुल**
फार्मास्यूटिक्स	८०	२०	१००	८०	२०	१००
फार्मास्युटिकल रसायन शास्त्र	८०	२०	१००	८०	२०	१००
फार्माकोग्नॉसी (भेषज-अभिज्ञान)	८०	२०	१००	८०	२०	१००
मानव शरीर रचना विज्ञान और शरीर क्रिया विज्ञान	८०	२०	१००	८०	२०	१००
सामाजिक फार्मेसी	८०	२०	१००	८०	२०	१००
			५००	**+ ५००**	**=**	**१०००**

* आंतरिक मूल्यांकन

तालिका – V

फार्मेसी में डिप्लोमा (भाग **-I**)

परीक्षा

	थ्योरी के लिए अधिकतम अंक			**प्रैक्टिकल के लिए अधिकतम अंक**		
विषय	**परीक्षा**	***सत्रात्मक**	**कुल**	**परीक्षा**	***सत्रात्मक**	**कुल**
फार्माकोलॉजी	८०	२०	१००	८०	२०	१००
सामुदायिक फार्मेसी और प्रबंधन	८०	२०	१००	८०	२०	१००
जीवरसायन एवं नैदानिक रोग विज्ञान	८०	२०	१००	८०	२०	१००
फार्माकोथैरेप्यूटिक्स	८०	२०	१००	८०	२०	१००
अस्पताल और नैदानिक फार्मेसी	८०	२०	१००	८०	२०	१००
फार्मेसी कानून और नैतिकता	८०	२०	१००	–	–	–
			६००	**+४००**	**+१००**	**= ११००**

* आंतरिक मूल्यांकन

१०. फार्मेसी में डिप्लोमा भाग-I और भाग-II परीक्षा में प्रवेश की पात्रताः-

केवल ऐसे अभ्यर्थी ही फार्मेसी में डिप्लोमा (भाग-I) या (भाग-II) की परीक्षा में शामिल हो सकेंगे, जो उस शैक्षणिक संस्थान, जहाँ से उन्होंने फार्मेसी में डिप्लोमा भाग-I या भाग-II अध्ययन पाठ्यक्रम पूरा किया है, के प्रमुख द्वारा जारी किया गया प्रमाण-पत्र प्रस्तुत कर इस आशय की पुष्टि करें कि उन्होंने प्रत्येक विषय में थ्योरी और प्रैक्टिकल में अलग-अलग चलने वाली कक्षाओं में ७५ प्रतिशत से अधिक उपस्थिति बनाये रखते हुए नियमित एवं संतोषजनक फार्मेसी में डिप्लोमा (भाग-I) या (भाग-II) तरीके से पाठ्यक्रम पूरा किया है।

११. परीक्षाओं का प्रकारः-

(१) तालिका - IV और V में उल्लिखित विषयों की थ्योरी और प्रैक्टिकल परीक्षा तीन घंटे की अवधि की होगी। थ्योरी और प्रैक्टिकल दोनों को दो अलग-अलग पेपर के रूप में माना जाता है।

(२) किसी विषय के थ्योरी या प्रैक्टिकल की परीक्षा में अनुत्तीर्ण अभ्यर्थी को अनुत्तीर्ण विषय की परीक्षा दोबारा देनी होगी। उत्तीर्णता मानदंड के लिए विषय विशेष के थ्योरी और प्रैक्टिकल को अलग-अलग विषय माना जाता है।

(३) प्रैक्टिकल परीक्षा में एक मौखिक-परीक्षा भी शामिल होगी।

१२. सत्रात्मक अंक देना एवं रिकॉर्ड का रखरखावः-

(१) फार्मेसी भाग-I में डिप्लोमा के लिए प्रशिक्षण प्रदान करने वाले संस्थान में और फार्मेसी भाग-II पाठ्यक्रमों में डिप्लोमा प्रदान करने वाले संस्थान में थ्योरी और प्रैक्टिकल दोनों प्रकार के कक्षा कार्य (क्लास वर्क) और परीक्षाओं का एक नियमित रिकॉर्ड, संस्थान में प्रत्येक छात्र के लिए बनाए रखा जाएगा और प्रत्येक थ्योरी के लिए २० अंक और प्रत्येक प्रैक्टिकल विषय के लिए २० अंक सत्रात्मक अंकों के रूप में दिये जायेंगे।

(२) प्रत्येक शैक्षणिक वर्ष के दौरान दो या अधिक आवधिक सत्रात्मक (आंतरिक मूल्यांकन) परीक्षाएं होंगी। किसी भी दो प्रदर्शन (परफॉर्मेंस) के सर्वाधिक कुल योग के आधार पर सत्रात्मक अंकों की गणना होगी।

(३) प्रैक्टिकल परीक्षा में सत्रात्मक (सेशनल) अंक निम्नलिखित आधार पर दिए जाएंगेः

(i) सत्रात्मक/अंतर परीक्षा में वास्तविक प्रदर्शन = १० अंक

(ii) व्यावहारिक कक्षा/अंतर कार्य में दिन-प्रतिदिन मूल्यांकन = १० अंक

१३. परीक्षा उत्तीर्ण करने के लिए न्यूनतम अंक

जब तक कि छात्र थ्योरी और प्रैक्टिकल परीक्षाओं के अलग-अलग प्रत्येक विषय में सत्रात्मक अंकों सहित कम-से-कम ४० प्रतिशत अंक प्राप्त नहीं करता, तब तक उस छात्र को फार्मेसी में डिप्लोमा की परीक्षा में उत्तीर्ण घोषित नहीं किया जायेगा। सभी विषयों को मिलाकर ६० प्रतिशत या इससे अधिक अंक पाने वाले अभ्यर्थियों को प्रथम श्रेणी से उत्तीर्ण घोषित किया जायेगा। किसी भी विषय या विषयों में ७५ प्रतिशत या इससे अधिक अंक अर्जित करने वाले छात्र को उस विषय या उन विषयों में विशेष सम्मान अंकों (डिस्टिंक्शन मार्क्स) से उत्तीर्ण घोषित किया जायेगा। प्रथम श्रेणी और विशेष सम्मान अंक (डिस्टिंक्शन मार्क्स) इस शर्त के आधीन होगा कि छात्र एक ही प्रयास में सभी विषयों को पास करेगा।

१४. फार्मेसी में डिप्लोमा (भाग-II) में कक्षोन्नति की पात्रताः-

वो सभी अभ्यर्थी जो सभी विषयों में उपस्थित हुए हैं और फार्मेसी में डिप्लोमा भाग-I परीक्षा में उत्तीर्ण हुए हैं, वे फार्मेसी में डिप्लोमा भाग-II वर्ग में कक्षोन्नति के पात्र हैं। हालाँकि, दो से अधिक विषयों में अनुत्तीर्ण होने पर वो फार्मेसी में डिप्लोमा भाग-II वर्ग में कक्षोन्नत नहीं होंगे।

१५. सत्रात्मक अंकों में सुधारः-

अच्छे सत्रात्मक अंकों के इच्छुक अभ्यर्थी अगले शैक्षणिक वर्ष के दौरान दो अतिरिक्त सत्रीय परीक्षाओं में उपस्थित होकर अच्छा अंक पा सकते हैं। दोनों परीक्षाओं के औसत अंक के आधार पर थ्योरी और प्रैक्टिकल में अच्छे सत्रात्मक अंक हासिल किया जा सकता है। प्रैक्टिकल कक्षा में दिन-प्रतिदिन के मूल्यांकन के आधार पर अभ्यर्थी को दिये गये अंक को बढ़ाने के लिए अभ्यर्थी को फिर से नियमित अध्ययन पाठ्यक्रम में उपस्थित होना होगा।

१६. परीक्षाओं की मंजूरीः-

विनियमन ६ से लेकर १५ तक में बतायी गयी परीक्षाएं किसी राज्य में ऐसे प्राधिकारी (यहाँ से आगे इन्हें परीक्षा प्राधिकारी कहा जायेगा) द्वारा ली जायेंगी, जिन्हें भेषजी अधिनियम, १९४८ की धारा १२ की उप-धारा (२) के तहत भारतीय भेषजी परिषद द्वारा मान्यता प्रदान की जायेगी। इन विनियमनों के परिशिष्ट-ख में दी गयी शर्तों को परीक्षा प्राधिकारी द्वारा पूरा किये जाने की स्थिति में ही, इस तरह की मान्यता को स्वीकृति मिल पायेगी।

१७. फार्मेसी में डिप्लोमा (भाग-II) के लिए परीक्षा उत्तीर्ण करने का प्रमाण पत्र

फार्मेसी में डिप्लोमा भाग-II के लिए परीक्षा उत्तीर्ण करने का प्रमाण पत्र सफल छात्र को परीक्षा प्राधिकारी द्वारा दिया जाएगा।

अध्याय - ३

फार्मेसी में डिप्लोमा (भाग - III)

(प्रैक्टिकल ट्रेनिंग)

१८. प्रैक्टिकल ट्रेनिंग के लिए अवधि और अन्य शर्तेंः-

(१) मान्यता-प्राप्त परीक्षा प्राधिकारी द्वारा फार्मेसी में डिप्लोमा के भाग-II की ली गयी परीक्षा में उपस्थित होने के बाद, अभ्यर्थी निम्नलिखित संस्थानों में से एक या एक से अधिक संस्थान में प्रैक्टिकल ट्रेनिंग हासिल करने के लिए पात्र होंगेः

(i) केंद्र/राज्य सरकार द्वारा संचालित अस्पताल/डिस्पेंसरियाँ।

(ii) औषधि एवं प्रसाधन नियम, १९४५ के तहत दवाओं की खुदरा बिक्री के लिए लाइसेंस-प्राप्त फार्मेसी, जहाँ पंजीकृत फार्मासिस्ट्स की सेवाएँ मौजूद हों।

(iii) ऊपर वर्णित उपनियम (i) में दिये गये अस्पताल और डिस्पेंसरी को छोड़कर अन्य अस्पताल और डिस्पेंसरी द्वारा प्रैक्टिकल ट्रेनिंग देने के लिए उन्हें इन विनियमनों के परिशिष्ट-ग में दी गयी शर्तों को पूरा कर पाने की स्थिति में ही भारतीय भेषजी परिषद द्वारा मान्यता प्रदान की जायेगी।

(२) उपनियम (१) में दिये गये संस्थान प्रशिक्षण देने के लिए पात्र होंगे, बशर्ते औषधि एवं प्रसाधन अधिनियम, १९४० और औषधि एवं प्रसाधन नियम, १९४५ के तहत लाइसेंस प्राप्त किसी भी अस्पताल, डिस्पेंसरी या फार्मेसी में छात्र फार्मासिस्ट्स की संख्या ४ से अधिक न हो, जहाँ एक पंजीकृत फार्मासिस्ट उस कार्य में शामिल होगा जिसमें छात्र फार्मासिस्ट को प्रैक्टिकल ट्रेनिंग दी जा रही है, और जहाँ एक से अधिक पंजीकृत फार्मासिस्ट इसी तरह काम में लगे हैं, वहाँ ऐसे प्रत्येक अतिरिक्त एवं पंजीकृत फार्मासिस्ट के लिए यह संख्या २ से अधिक नहीं होगी।

(३) प्रैक्टिकल ट्रेनिंग (व्यावहारिक प्रशिक्षण) के दौरान, प्रशिक्षु को जानकारी होनी चाहिएः-

(i) फार्मेसी के पेशे से संबंधित विभिन्न विधान अधिनियमों द्वारा आवश्यक रिकॉर्ड रखने के कार्य की जानकारी; तथा

(ii) इन विनियमों के विनियमन ६ के अंतर्गत तालिका III में उल्लिखित गतिविधियों में व्यावहारिक अनुभव।

(४) प्रैक्टिकल ट्रेनिंग तीन महीने से अधिक की अवधि में पाँच सौ घंटे से कम की नहीं होगी, जिसमें से दो सौ पचास घंटे का समय नुस्खों के लिए वास्तविक रूप में दवाएँ तैयार करने में देना होगा।

१९. ट्रेनिंग शुरू होने से पहले पालन की जाने वाली पद्धतिः-

(१) प्रायोगिक प्रशिक्षण प्रदान करने वाले संस्थान के प्रमुख, आवेदन के आधार पर कथित प्रैक्टिकल ट्रेनिंग में शामिल होने के लिए पात्र अभ्यर्थी को ट्रिप्लिकेट 'प्रैक्टिकल ट्रेनिंग कॉन्ट्रैक्ट फॉर्म फॉर फार्मासिस्ट' (जिसे यहाँ से आगे कॉन्ट्रैक्ट फॉर्म (अनुबंध प्रपत्र) कहा जायेगा) देंगे। कॉन्ट्रैक्ट फॉर्म (अनुबंध प्रपत्र) इन नियमों में परिशिष्ट-घ में निर्दिष्ट होगा।

(२) कॉन्ट्रैक्ट फॉर्म का खंड I प्रायोगिक प्रशिक्षण प्रदान करने वाले संस्थान के प्रमुख द्वारा भरा जायेगा। कथित कॉन्ट्रैक्ट फॉर्म का खंड II प्रशिक्षु द्वारा भरा जायेगा और प्रशिक्षण देने के लिए सहमत संस्थान के प्रमुख (जिन्हें यहाँ से आगे अप्रेंटिस मास्टर कहा जायेगा) कथित कॉन्ट्रैक्ट फॉर्म का खंड III भरेंगे।

(३) भरे गये फॉर्म की एक प्रति (जिसे यहाँ से आगे कॉन्ट्रैक्ट फॉर्म की पहली प्रति कहा जायेगा) प्रायोगिक प्रशिक्षण प्रदान करने वाले संस्थान के प्रमुख के यहाँ जमा करने की जिम्मेदारी प्रशिक्षु की होगी और अन्य दो प्रतियाँ (जिन्हें यहाँ से आगे दूसरी और तीसरी प्रति कहा जायेगा) अप्रेंटिस मास्टर (यदि वह चाहे तो) या प्रशिक्षु द्वारा प्रशिक्षण पूरा होने तक भरी जायेंगी।

२०. फार्मेसी में डिप्लोमा भाग -III उत्तीर्ण करने का प्रमाण पत्रः-

प्रैक्टिकल ट्रेनिंग अवधि को संतोषजनक तरीके से पूरा कर लिए जाने पर, अप्रेंटिस मास्टर द्वारा कॉन्ट्रैक्ट फॉर्म की दूसरी व तीसरी प्रति का खंड IV भरा जायेगा और उसे प्रायोगिक प्रशिक्षण प्रदान करने वाले संस्थान के प्रमुख यहाँ अग्रेषित कर दिया जायेगा, जो दूसरी व तीसरी प्रति की एंट्रीज को पहली प्रति में उपयुक्त रूप में प्रविष्ट करेंगे और कॉन्ट्रैक्ट फॉर्म की तीनों प्रतियों का खंड V भरेंगे और उसके बाद, दूसरी और तीसरी दोनों ही प्रति प्रशिक्षु को सौंप देंगे।

यह अनुबंध प्रपत्र, सभी प्रकार से पूरा किया गया, जिसे फार्मेसी में डिप्लोमा (भाग-III) के पाठ्यक्रम को सफलतापूर्वक पूरा करने का प्रमाण पत्र माना जाएगा।

अध्याय - ४

२१. फार्मेसी में डिप्लोमा का प्रमाणपत्रः-

फार्मेसी में डिप्लोमा भाग I और भाग II की उत्तीर्णता प्रस्तुत किये जाने और फार्मेसी में डिप्लोमा (भाग-III) की प्रैक्टिकल ट्रेनिंग संतोषजनक तरीके से पूरा कर लिये जाने पर, सफल अभ्यर्थी को परीक्षा प्राधिकारी द्वारा फार्मेसी में डिप्लोमा का प्रमाणपत्र (सर्टीफिकेट) जारी किये जाने की मंजूरी दी जायेगी।

२२. निरसन एवं बचतः-

(१) भारतीय भेषजी परिषद द्वारा प्रकाशित शिक्षा विनियमन, १९९१ (यहाँ के बाद कथित विनियमन कहा गया है), देखें संख्या १४-५५/८७ (पार्ट)-पीसीआई/२४८४-२८८७, तिथि ११.७.१९९२, और उसमें सभी संशोधन एतद् द्वारा निरस्त किये जाते हैं।

(२) इस तरह के निरसन के बावजूद,

(क) कथित विनियमन के तहत की गयी किसी चीज या किसी कार्य को इन विनियमनों के संबंधित प्रावधान के तहत किया गया माना जायेगा।

(ख) एक व्यक्ति जिसे फार्मेसी में डिप्लोमा के लिए प्रशिक्षण के दौरान उक्त विनियमों के तहत छात्र के रूप में भर्ती कराया गया था और जिसने इन विनियमों के प्रारंभ में परीक्षा उत्तीर्ण नहीं की थी, को उक्त विनियमों के प्रावधानों के अनुसार परीक्षा उत्तीर्ण करनी होगी, मानो ये नियम लागू ही नहीं हुए थेः

हालाँकि दिया गया है, विशेष राज्य में परीक्षा प्राधिकारी एक तारीख तय कर सकता है जिसके बाद कथित विनियमन के तहत परीक्षा आयोजित नहीं की जाएगी।

परिशिष्ट-क
(देखें विनियमन ८)

शैक्षणिक संस्थान द्वारा पूरी की जाने वाली शर्तें

फार्मासिस्ट हेतु अध्ययन के पाठ्यक्रमों के अनुमोदन के लिए भारतीय भेषजी परिषद को आवेदन करने वाले किसी भी प्राधिकरण को भेषजी अधिनियम, १९४८ की धारा १२ की उपधारा (१) के अधीन निम्नलिखित प्रदान करना होगा।

(क) आवास

विभाग के प्रधानाचार्य/प्रमुख के कक्ष, कार्यालय, कक्षा, पुस्तकालय, कर्मचारी, कर्मचारियों के सार्वजनिक कक्ष, छात्रों के सार्वजनिक कक्ष, संग्रहालय, स्टोर आदि के लिए पर्याप्त हवादार प्रकाश व्यवस्था और अन्य स्वच्छता वाले उपयुक्त और पर्याप्त आवास प्रदान किये जाने चाहिए।

नीचे दी गई कम से कम चार प्रयोगशालाओं को प्रदान किया जाना चाहिएः -

१. फार्मास्यूटिक्स प्रयोगशाला

२. फार्मा रसायन शास्त्र प्रयोगशाला

३. फिजियोलॉजी (शरीर क्रिया विज्ञान), फार्माकोलॉजी एवं फार्माकोग्नॉसी (भेषज-अभिज्ञान) प्रयोगशाला

४. जीवरसायन, नैदानिक रोग विज्ञान, अस्पताल और नैदानिक फार्मेसी प्रयोगशाला

प्रयोगशालाओं के अतिरिक्त, बैलेंस रूम, एसेप्टिक रूम अथवा कैबिनेट, एक मशीन रूम भी प्रदान किए जाने चाहिए।

न्यूनतम ५०० वर्ग फीट की शर्त के अधीन प्रयोगशाला का फर्श क्षेत्र किसी भी समय प्रयोगशाला में काम करने के लिए आवश्यक प्रति छात्र ३० वर्ग फीट से कम नहीं होना चाहिए।

प्रयोगशालाओं को इस तरह से उपयुक्त और निर्मित किया जाना चाहिए कि इन्हें यथोचित रूप से स्वच्छ रखा जा सके। जहाँ भी आवश्यक हो गैस और पानी की फिटिंग, अलमारियाँ, धुआँ अलमारी प्रदान की जानी चाहिए।

संस्थान निम्नलिखित विवरण के अनुसार 'मॉडल फार्मेसी' प्रदान करेंगे -

मॉडल फार्मेसी	संख्या	क्षेत्र
<u>आवश्यकः</u> चालू मॉडल सामुदायिक फार्मेसी <u>वांछितः</u> ड्रग मॉडल स्टोर	०१	८० वर्ग मीटर (औषधि सूचना केंद्र के लिए १० वर्ग मीटर और रोगी परामर्श के लिए १० वर्ग मीटर।)

"पाठ्यक्रम में जहाँ कहीं भी पशु पर प्रयोग करने की बात कही गयी है, अपेक्षित ज्ञान तथा कौशल कम्प्यूटर आधारित मापक के जरिए प्रदान किया जाये। पशुओं के रखने का स्थान पशुओं पर प्रयोग पर नियन्त्रण तथा देखरेख करने के उद्देश्य से गठित समिति (सी पी सी एस ई ए) के दिशानिर्देशों के अनुसार होना चाहिए।

(ख) कर्मचारी

प्रधानाचार्य/निदेशक/आचार्य/संस्थान के प्रमुख/विभागाध्यक्ष सप्ताह में आठ घंटे तक अध्यापन में लगे रह सकते हैं, और अन्य शिक्षण कर्मचारियों का कार्य भार सोलह घंटे प्रति सप्ताह से अधिक नहीं होना चाहिए।

कर्मचारी-छात्र अनुपात, थ्योरी कक्षाओं में १:६० और प्रैक्टिकल कक्षाओं में १:२० से अधिक नहीं होना चाहिए। प्रैक्टिकल में ३० छात्रों के एक बैच के लिए दो शिक्षक होने चाहिए। उपरोक्त मानदंडों के अनुसार, ६० छात्रों के लिए निम्नलिखित कर्मचारियों की आवश्यकता है:

१. प्रधानाचार्य/निदेशक/आचार्य/संस्थान के प्रमुख/विभागाध्यक्ष - एक

२. व्याख्याता:

- एम.फार्मा/फार्मा. डी - तीन
- ३ वर्ष के पेशेवर अनुभव के साथ बी. फार्मा - चार

नियमित संकाय के अलावा, संस्थान में एनाटॉमी और फिजियोलॉजी और बायोकैमिस्ट्री और क्लिनिकल पैथोलोजी पढ़ाने के लिए विजिटिंग फैकल्टी के रूप में बैचलर ऑफ मेडिसन और बैचलर ऑफ सर्जरी (एम.बी.बी.एस.) संकाय हो सकता है।

प्रधानाचार्य/निदेशक/आचार्य/संस्थान के प्रमुख/विभागाध्यक्ष सहित शिक्षण संकाय की न्यूनतम योग्यता एवं अनुभव और उनके वेतनमान को भेषजी संस्थानों में शिक्षकों की न्यूनतम योग्यता विनियम, २०१४ में निर्धारित किया जाएगा।

शिक्षण कर्मचारियों का वेतनमान समान श्रेणी के पदों के लिए राज्य सरकार/विश्वविद्यालय अनुदान आयोग /अखिल भारतीय तकनीकी शिक्षा परिषद् द्वारा निर्धारित वेतनमान से कम नहीं होगा।

बशर्ते कि उपर्युक्त योग्यता निरस्त शिक्षा विनियमों के तहत नियुक्त पदाधिकारियों पर लागू नहीं होगी।

गैर-शिक्षण कर्मचारी

डी. फार्मा पाठ्यक्रम के लिए गैर-शिक्षण कर्मचारियों की सूची:

१.	प्रयोगशाला तकनीशियन (योग्यता- फार्मेसी में डिप्लोमा)		२
२.	प्रयोगशाला परिचर		४
३.	कार्यालय अधीक्षक		१
४.	लिपिक-सह-लेखाकार		१
५.	स्टोर-कीपर (भंडारपाल)		१
६.	टाइपिस्ट (टंकक)		१
७.	सहायक पुस्तकालय अध्यक्ष		१
८.	चपरासी		२
९.	सफाई करने वाला/सफाई कर्मचारी		४
१०.	माली		१

संग्रहालय

प्रत्येक संस्थान में पाठ्यक्रम में उल्लिखित क्रूड ड्रग्स, हर्बेरियम शीट्स और दवाओं और पौधों के वानस्पतिक नमूनों का संग्रहालय होगा। इसके अलावा, निम्नलिखित की सिफारिश की जाती है: -

१. औषधीय पौधों की रंगीन स्लाइड;

२. लोकप्रिय पेटेंट दवाओं का प्रदर्शन; तथा

३. दवाओं में आम उपयोग के कंटेनर।

पुस्तकालय

प्रत्येक संस्थान में एक पुस्तकालय होगा जिसमें पाठ्यक्रम में उल्लिखित पुस्तकें और साथ ही वर्तमान औषधीय पत्रिकाएँ भी होनी चाहिए। पुस्तकालय में पुस्तकों को संदर्भित करने के लिए छात्रों और कर्मचारियों के लिए पर्याप्त जगह होनी चाहिए।

नोटः उपरोक्त आवश्यकताएं न्यूनतम आवश्यकताएं हैं और अधिक भौतिक और शिक्षण सुविधा प्रदान करने के लिए संस्थान स्वतंत्र है।

उपकरण

उपकरण और सामग्री की सूची समय-समय पर भारतीय भेषजी परिषद द्वारा तय की जा सकती है।

परिशिष्ट-ख

(देखें विनियमन १६)

परीक्षा प्राधिकारी द्वारा पूरी की जाने वाली शर्तें

१. परीक्षा प्राधिकारी या तो सांविधिक भारतीय विश्वविद्यालय या केंद्र या राज्य सरकार द्वारा गठित निकाय होगा। यह सुनिश्चित करेगा कि परीक्षा केंद्रों पर परीक्षाओं के अनुशासन और शिष्टाचार का सख्ती से पालन हो।

२. यह भारतीय भेषजी परिषद के निरीक्षक या निरीक्षकों को परीक्षाओं का दौरा करने और निरीक्षण करने की अनुमति देगा।

३. यह प्रदान करेगा :-

(क) लिखित परीक्षाओं के लिए आवश्यक फर्नीचर सहित पर्याप्त कक्ष;

(ख) प्रैक्टिकल परीक्षाएं आयोजित करने के लिए उपयुक्त रूप से सुसज्जित प्रयोगशालाएं;

(ग) परीक्षा का संचालन और निरीक्षण के लिए योग्य एवं पर्याप्त संख्या में जिम्मेदार परीक्षक और कर्मचारी; तथा

(घ) ऐसी अन्य सुविधाएं जो परीक्षाओं के कुशल और उचित संचालन के लिए आवश्यक हों;

४. अभ्यर्थी के लिए आवश्यक होने पर, यह परीक्षा प्राधिकारी को निर्धारित शुल्क, यदि कोई है, का भुगतान करने के बाद परीक्षाओं में अभ्यर्थी को प्राप्त अंकों का विवरण प्रदान करेगा।

५. यह परिशिष्ट-ए में दर्शाए गये संबंधित विषयों के शिक्षकों के समान योग्यता वाले परीक्षकों की नियुक्ति करेंगे।

६. भेषजी अधिनियम १९४८ की धारा १२ की उप-धारा (३) के अनुपालन में, परीक्षा प्राधिकारी परीक्षाओं की तिथियाँ तय होने के छः हफ्ते पूर्व ही अग्रिम रूप से भारतीय भेषजी परिषद के सचिव को सूचित करेगा, ऐसी परीक्षाओं की समय-सारणी के बारे में बतायेगा, ताकि परिषद परीक्षाओं के निरीक्षण हेतु व्यवस्था बना सके।

७. चेयरमैन और, फार्मेसी परीक्षाओं के संचालन व परीक्षक की नियुक्ति से संबंधित परीक्षा प्राधिकारी की परीक्षा समिति के कम-से-कम एक विशेषज्ञ सदस्य के पास फार्मेसी की योग्यता मौजूद होनी चाहिए।

परिशिष्ट-ग

{देखें विनियमन १८(१)(iii)}

प्रैक्टिकल ट्रेनिंग के लिए मान्यता प्राप्त करने हेतु संस्थान द्वारा पूरी की जाने वाली शर्तें

१. वह संस्थान, जहाँ छात्र फार्मासिस्ट्स को प्रैक्टिकल ट्रेनिंग दी जाती है, आवश्यकतानुसार समय-समय पर ऐसी जानकारी उपलब्ध करायेगा, जिसे भारतीय भेषजी परिषद द्वारा कर्मचारी, आवास और संबंधित संस्थान के उपकरण व इसके कार्य के बारे में मांगी जा सकती है।

२. संस्थान द्वारा भारतीय भेषजी परिषद के निरीक्षकों को कार्य समय के दौरान किसी भी उपयुक्त समय पर परिसर के निरीक्षण की अनुमति दी जायेगी।

३. छात्र फार्मासिस्टों की देखभाल के लिए, संस्थान कुछ सदस्यों या अपने कर्मचारियों को कार्य सौंपेगा, जो पंजीकृत फार्मासिस्ट होंगे। स्टाफ के ऐसे सदस्य संबंधित संस्था प्रमुख के प्रति जवाबदेह होंगे।

४. संस्थान द्वारा ऐसे अवसर, आवास, उपकरण, सामग्री व संदर्भ पुस्तकें उपलब्ध करायी जायेंगी, जिनकी छात्र फार्मासिस्ट्स की अच्छी तरह से प्रैक्टिकल ट्रेनिंग के लिए आवश्यकता पड़ सकती है।

५. औषधि एवं प्रसाधन नियम, १९४५ और औषधि एवं प्रसाधन अधिनियम, १९४० के तहत लाइसेंस प्राप्त किसी भी अस्पताल, फार्मेसी तथा दवा विक्रेता (केमिस्ट) एवं औषधि विक्रेता (ड्रगिस्ट) में छात्र फार्मासिस्ट्स की संख्या ४ से अधिक न हो, जहाँ एक पंजीकृत फार्मासिस्ट उस

कार्य में शामिल होगा जिसमें छात्र फार्मासिस्ट को प्रैक्टिकल ट्रेनिंग दी जा रही है; और जहाँ एक से अधिक पंजीकृत फार्मासिस्ट इसी तरह काम में लगे हैं, वहाँ ऐसे प्रत्येक अतिरिक्त एवं पंजीकृत फार्मासिस्ट के लिए यह संख्या २ से अधिक नहीं होगी।

६. विनियमन १८ के अंतर्गत मान्यता प्राप्त करने के इच्छुक संस्थान लिखित रूप में सचिव, भारतीय भेषजी परिषद को आवेदन देंगे और बतायेंगे कि वो मान्यता प्राप्त करना चाहते हैं।

७. इस बात की संतुष्टि हो जाने पर कि संस्थान इन नियमों द्वारा तय की गयी शर्तों का पालन करेगा, भारतीय भेषजी परिषद द्वारा इस तरह की मान्यता प्रदान की जायेगी।

८. इन स्थितियों की व्याख्या या अवलोकन से संबंधित कोई भी सवाल पैदा होने पर, भारतीय भेषजी परिषद का निर्णय अंतिम होगा।

परिशिष्ट-घ

{देखें विनियमन १६(१)}

फार्मासिस्टों के लिए प्रैक्टिकल ट्रेनिंग कॉन्ट्रैक्ट फॉर्म

खंड I

यह आवेदन पत्र

_____

(छात्र फार्मासिस्ट का नाम)

पुत्र/पुत्री _____ आवास _____को जारी किया गया है, जिन्होंने मेरे समक्ष इस आशय का प्रमाण प्रस्तुत किया है कि वह भेषजी अधिनियम, १९४८ की धारा १० के तहत बने शिक्षा विनियमन, २०२० में निर्धारित प्रैक्टिकल ट्रेनिंग लेने के पात्र हैं।

दिनाँकः प्रायोगिक प्रशिक्षण प्रदान करने वाले संस्थान के प्रमुख

खंड II

मैं _____

(छात्र फार्मासिस्ट का नाम)

_____ के _____

(संस्थान का नाम) (अप्रेंटिस मास्टर का नाम)

_____

(अस्पताल या फार्मेसी) को उपरोक्त प्रशिक्षण के लिए अपने अप्रेंटिस मास्टर के रूप में स्वीकार करता/करती हूँ और अपनी ट्रेनिंग की पूरी अवधि के दौरान मैं इनकी आज्ञा मानूंगा/मानूंगी और उन्हें सम्मान दूंगा/दूंगी।

(छात्र फार्मासिस्ट)

खंड III

मैं _____

(अप्रेंटिस मास्टर का नाम)

_____

(छात्र फार्मासिस्ट का नाम)

को प्रशिक्षु के रूप में स्वीकार करता/करती हूँ और मैं उन्हें अपने संगठन में प्रशिक्षण हेतु ऐसी सुविधाएँ दूंगा/दूंगी जिससे वह अपने प्रशिक्षण काल में निम्नलिखित हासिक कर सकें:

१. फार्मेसी के पेशे को प्रभावित करने वाले विभिन्न कानूनों द्वारा आवश्यक रिकॉर्ड्स के रखरखाव की कार्यात्मक जानकारी; और

२. प्रैक्टिकल (व्यावहारिक) अनुभव में:-

१) ड्रग्स और मेडिकल उपकरणों का संग्रहण (भंडारण)

२) सूची नियंत्रण प्रक्रियाएं

३) पर्चे का रखरखाव

४) वितरण

५) रोगी परामर्श

मैं यह भी मानता हूँ कि उसके/उसकी मार्गदर्शन के लिए एक पंजीकृत फार्मासिस्ट को नियुक्त किया जाएगा

(अप्रेंटिस मास्टर)

(संस्थान का नाम और पता)

खंड IV

मैं यह प्रमाणित करता हूं कि _____(छात्र फार्मासिस्ट का नाम) ने _____ घंटे की _____ महीने के प्रशिक्षण किया जो खंड III में वर्णित विवरण के अनुसार है।

_____

(प्रायोगिक प्रशिक्षण प्रदान करने वाले संस्थान के प्रमुख)

खंड V

मैं प्रमाणित करता हूं कि_____(छात्र फार्मासिस्ट का नाम) ने फार्मेसी अधिनियम, १९४८ की धारा १० के तहत बनाई गई शिक्षा विनियम, **२०२०** के विनियमन १८ के तहत अपने प्रैक्टिकल (व्यावहारिक) प्रशिक्षण को संपूर्ण रूप से पूरा कर लिया है। भारतीय भेषजी परिषद द्वारा अनुमोदित संस्थान में उनका व्यावहारिक प्रशिक्षण हुआ था।

दिनाँक:

_____

(शैक्षणिक संस्थान के प्रमुख)

अर्चना मुदगल, निबन्धक-एवं-सचिव

[विज्ञापन-III/4/असा./298/2020-21]

PHARMACY COUNCIL OF INDIA

NOTIFICATION

New Delhi, the 9th October, 2020

The Education Regulations, 2020 for Diploma Course in Pharmacy

Regulations made under section 10 of the Pharmacy Act, 1948.

(As approved by the Government of India, Ministry of Health & Family Welfare vide letter No. Z-28020/59/2019-AHS/FTS-8012809 dated 7.10.2020 and notified by the Pharmacy Council of India.)

No.14-55/2020-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 1

1. Short title and commencement- (1) These regulations may be called the Education Regulations, 2020 for Diploma course in Pharmacy.

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

2. Qualification for Pharmacist- The minimum qualification required for registration as a pharmacist shall be a pass in Diploma in Pharmacy (Part-I & Part-II) and satisfactory completion of Diploma in Pharmacy (Part-III).

Or

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

3. Diploma in Pharmacy (Part-I, Part-II and Part-III) shall consist of a certificate of having completed the course of study and passed the examination after satisfactory completing the practical training as prescribed in Chapter-2 and Chapter-3 of these regulations.

CHAPTER 2

4. Diploma in Pharmacy (Part-I and Part-II)-

Minimum qualification for admission to Diploma in Pharmacy-A pass in 10+2 examination (science academic stream) with Physics, Chemistry and Biology or Mathematics.

or

Any other qualification approved by the Pharmacy Council of India as equivalent to the above examination.

Provided that there shall be reservation of seats for the Scheduled Castes and the Scheduled Tribes candidates in accordance with the instructions issued by the Central Government /State Governments /Union territory administrations as the case may be from time to time.

5. Duration of the course-

(1) The duration of the course shall be for two academic years. Each academic year shall be spread over a period of not less than one hundred and eighty working days.

(2) In addition there shall be a five hundred hours of practical training spread over a period of not less than three months.

6. Course of study- The course of study for Diploma in Pharmacy Part-I and Diploma in Pharmacy Part-II shall include the subjects as given in the Tables I & II below. The number of hours devoted to each subject for its teaching in Theory and Practical, shall not be less than that noted against it in columns 2 and 3 of the Tables below. **However, the course of study and practical training may be modified by the Pharmacy Council of India from time to time.**

Table – I
Diploma in Pharmacy (Part - I)

	Number of hours		
Subject	**Theory**	**Practical**	**Tutorial**
Pharmaceutics	75	75	25
Pharmaceutical Chemistry	75	75	25
Pharmacognosy	75	75	25
Human Anatomy & Physiology	75	75	25
Social Pharmacy	75	75	25
Total	**375**	**375**	**125**

Table – II

Diploma in Pharmacy (Part II)

	Number of hours		
Subject	**Theory**	**Practical**	**Tutorial**
Pharmacology	75	50	25
Community Pharmacy & Management	75	75	25
Biochemistry & Clinical Pathology	75	50	25
Pharmacotherapeutics	75	25	25
Hospital & Clinical Pharmacy	75	25	25
Pharmacy Law & Ethics	75	--	25
Total	**450**	**225**	**150**

TABLE III

Diploma in Pharmacy (Part III)

Practical Training – 500 hours

Activities

1) Stocking of Drugs and Medical Devices
2) Inventory Control Procedures
3) Handling of prescriptions
4) Dispensing (250 hours)
5) Patient counseling

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

8. Approval of the authority conducting the course of study-

(1) No authority in a State shall start or conduct Diploma in Pharmacy course of study without the prior approval of the Pharmacy Council of India.

(2) The course of regular academic study prescribed under regulation 6 shall be conducted in an institution, approved by the Pharmacy Council of India under sub-section (1) of Section 12 of the Pharmacy Act, 1948.

Provided that the Pharmacy Council of India shall not approve any institution under this regulation unless it provides adequate arrangements for teaching in regard to building, accommodation, equipments and teaching staff etc. as specified in Appendix-A to these regulations which may be amended by the Pharmacy Council of India from time to time.

9. Examinations-

1) There shall be an annual examination at the end of the academic year.

2) If necessary, there shall be a supplementary examination for the students who are not able to pass Diploma in Pharmacy Part-I or Part-II, as the case may be, as per the criteria specified by the examining authority.

3) The examinations shall be of written and practical (including viva – voce) nature, carrying maximum marks for each part of a subject, as indicated in Table IV and V below.

Table – IV
DIPLOMA IN PHARMACY (PART-I) EXAMINATION

	Maximum marks for Theory			**Maximum marks for Practicals**		
Subject	**Examination**	***Sessional**	**Total**	**Examination**	***Sessional**	**Total**
Pharmaceutics	80	20	100	80	20	100
Pharmaceutical Chemistry	80	20	100	80	20	100
Pharmacognosy	80	20	100	80	20	100
Human Anatomy & Physiology	80	20	100	80	20	100
Social Pharmacy	80	20	100	80	20	100
			500	**+ 500 = 1000**		

*Internal assessment

Table – V

DIPLOMA IN PHARMACY (PART-II) EXAMINATION

	Maximum marks for Theory			**Maximum marks for Practicals**		
Subject	**Examination**	***Sessional**	**Total**	**Examination**	***Sessional**	**Total**
Pharmacology	80	20	100	80	20	100
Community Pharmacy & Management	80	20	100	80	20	100
Biochemistry & Clinical Pathology	80	20	100	80	20	100
Pharmacotherap eutics	80	20	100	80	20	100

Hospital and Clinical Pharmacy	80	20	100	80	20	100
Pharmacy law & Ethics	80	20	100	-	-	-
			600	**+400**	**+100**	**= 1100**

*Internal assessment

10. Eligibility for appearing at the Diploma in Pharmacy Part-I and Part II examination-

Only such candidates who produce certificate from the Head of the academic institution in which he/she has undergone the Diploma in Pharmacy Part-I and Part-II course in proof of his/her having regularly and satisfactorily undergone the course of study by attending not less than 75% of the classes held both in theory and in practical separately in each subject shall be eligible for appearing at the Diploma in Pharmacy (Part-I) or (Part II) examination, as the case may be.

11. Mode of examinations-

(1) Theory and Practical examination in the subjects mentioned in Tables – IV & V shall be of three hours duration. Both Theory and Practical are considered as two separate papers.

(2) A candidate who fails in theory or practical examination of a subject shall re-appear for the failed subject. Theory and Practical of a particular subject are considered as individual subjects for the purpose of pass criteria.

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

12. Award of sessional marks and maintenance of records-

(1) A regular record of both theory and practical class work and examinations held in an institution imparting training for diploma in Pharmacy Part-I and diploma in Pharmacy Part-II courses, shall be maintained for each student in the institution and 20 marks for each theory and 20 marks for each practical subject shall be allotted as sessional marks.

(2) There shall be two or more periodic sessional (internal assessment) examinations during each academic year. 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 / spacing examination = 10 marks.

(ii) Day to day assessment in the practical class/spacing work =10 marks.

13. Minimum marks for passing the examination - A student shall not be declared to have passed Diploma in Pharmacy examination unless he/she secures at least 40% marks in each of the subjects separately in the theory as well as the practical examinations, including sessional marks. The candidates securing 60% marks or above in aggregate in all subjects shall be declared to have passed in first class. The candidates securing 75% marks or above in any subject or subjects shall be declared to have passed with distinction in that subject or those subjects. The grant of first class and distinction shall be subject to the condition that the candidate shall pass all the subjects in a single attempt.

14. Eligibility for promotion to Diploma in Pharmacy (Part-II)-

All candidates who have appeared for all the subjects and passed the Diploma in Pharmacy Part-I examination are eligible for promotion to the Diploma in Pharmacy Part-II class. However failure in more than two subjects shall debar him/her from promotion to Diploma in Pharmacy Part II class.

15. Improvement of sessional marks-

The candidates who wish to improve sessional marks can do so, by appearing in two additional sessional examinations during the next academic year. The average score of the two examinations shall be the basis for improved sessional marks in theory as well as in practical. Marks awarded to a candidate for day to day assessment in the practical class cannot be improved unless he/she attends a regular course of study again.

16. Approval of examinations- The examinations mentioned in regulations 9 to 15 shall be held by an authority (hereinafter referred to as the Examining Authority) in a State, 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.

17. Certificate of passing examination for Diploma in Pharmacy (Part-II)- Certificate of having passed the examination for the Diploma in Pharmacy Part-II shall be granted by the examining authority to a successful student.

CHAPTER-3

Diploma in Pharmacy (Part-III)

(Practical Training)

18. Period and other conditions for practical training-

(1) After having appeared in Part-II examination for the Diploma in Pharmacy held by an approved Examining Authority a candidate shall be eligible to undergo practical training in one or more of the following institutions namely:

(i) Hospitals/Dispensaries run by Central /State Governments.

(ii) A pharmacy licensed for retail sale of drugs under the Drugs and Cosmetics Rules, 1945 having the services of registered pharmacists.

(iii) Hospital and Dispensary other than those specified in sub-regulation (i) above for the purpose of giving practical training shall have to be recognized by Pharmacy Council of India on fulfilling the conditions specified in Appendix-C to these regulations.

(2) The institutions referred in sub-regulation (1) shall be eligible to impart training subject to the condition that number of student pharmacists that may be taken in any hospital, dispensary or pharmacy licensed under the Drugs and Cosmetics Rules, 1945 made under the Drugs and Cosmetics Act, 1940, shall not exceed four where there is one registered pharmacist engaged in the work in which the student pharmacist is undergoing practical training, where there is more than one registered pharmacist similarly engaged, the number shall not exceed two for each additional such registered pharmacist.

(3) In the course of practical training, the trainee shall have exposure to -

(i) Working knowledge of keeping of records required by various Legislative Acts concerning the profession of pharmacy; and

(ii) Practical experience in activities mentioned in Table III under regulation 6 of these regulations.

(4) The practical training shall be not less than five hundred hours spread over a period of not less than three months provided that not less than two hundred and fifty hours are devoted to actual dispensing of prescriptions.

19. Procedure to be followed prior to commencement of the training-.

(1) The head of institution imparting practical training, on application, shall supply in triplicate 'Practical Training Contract Form for Pharmacist' (hereinafter referred to as the Contract Form) to the candidate eligible to undertake the said practical training. The Contract Form shall be as specified in Appendix-D to these regulations.

(2) The head of institution imparting practical training shall fill Section I of the Contract Form. The trainee shall fill Section II of the said Contract Form and the head of the institution agreeing to impart the training (hereinafter referred to as the Apprentice Master) shall fill Section III of the said Contract form.

(3) It shall be the responsibility of the trainee to ensure that one copy (hereinafter referred to as the first copy of the Contract Form) so filled is submitted to the head of institution imparting practical training and the other two copies (hereinafter referred to as the second copy and the third copy) shall be filed with the Apprentice Master (if he so desires) or with the trainee till completion of the training.

20. Certificate of passing Diploma in Pharmacy Part-III-

On satisfactory completion of the practical training period the Apprentice Master shall fill Section IV of the second copy and third copy of the Contract Form and forward it to the head of institution imparting practical training who shall suitably enter in the first copy of the entries from the second copy and the third copy and shall fill Section V of the three copies of Contract Form and thereafter hand over both the second copy and the third copy to the trainee.

This Contract Form, completed in all respects, shall be regarded as a certificate of having successfully completed the course of Diploma in Pharmacy (Part- III).

CHAPTER-4

21. Certificate of Diploma in Pharmacy- A certificate of Diploma in Pharmacy shall be granted by the examining authority to a successful candidate on producing certificates of having passed the Diploma in Pharmacy Part I and Part II and satisfactory completion of practical training for Diploma in Pharmacy (Part-III).

22. Repeal and Savings-

(1) The Education Regulations, 1991 (hereinafter referred to as the said regulations) published by the Pharmacy Council of India vide No. 14-55/87(Part)-PCI/2484-2887 dt.11.7.1992 and all amendments thereto are hereby repealed.

(2) Notwithstanding such repeal,

(a) Anything done or any action taken under the said regulations shall be deemed to have been done or taken under the corresponding provision of these regulations.

(b) A person who was admitted as a student under the said regulations to the course of training for Diploma in Pharmacy and who had not passed the examination at the commencement of these regulations shall be required to pass the examination in accordance with the provisions of the said regulations as if these regulations had not come into force:

Provided however, the Examining Authority in a particular State may fix a date after which the examinations under the said Regulations shall not be conducted.

Appendix-A

(See regulation 8)

Conditions to be fulfilled by the academic institution

Any authority in India applying to the Pharmacy Council of India for approval of courses of study for Pharmacists under sub-section (1) of section 12 of the Pharmacy Act, 1948 shall provide.

(A) ACCOMMODATION

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

At least four laboratories specified below should be provided for:-

1. Pharmaceutics Lab.
2. Pharm. Chemistry Lab.
3. Physiology, Pharmacology and Pharmacognosy Lab.
4. Biochemistry, Clinical Pathology, Hospital and Clinical Pharmacy Lab.

In addition to the laboratories, balance room, aseptic room or cabinet, a machine room are also to be provided for.

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 500 square feet.

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

The institutions shall provide “Model Pharmacy” as per following details –

Model Pharmacy	No.	Area
Essential : Running Model Community Pharmacy **Desirable** : Drug Model Store	01	80 Sq. Mts. (Including 10 Sq. mt for Drug Information Centre & 10 Sq. mt. for Patient Counseling)

Wherever animal experimentations are prescribed in the curriculum, the required knowledge and skill should be imparted by using computer assisted modules. Animal hold area shall be as per the Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) guidelines.

(B) STAFF

Principal/Director/Professor/Head of Institution /Head of the Department may be engaged in teaching upto eight hours a week, and the work load of other teaching staff should not be more than sixteen hours per week.

Staff student ratio should not exceed 1:60 in theory classes and 1:20 in practical classes. There should be two teachers for a batch of 30 students in practicals. According to the above norms, the following staff is required for an intake of 60 students:

1. Principal/Director/Professor/Head of Institution/Head of the Department	- One
2. Lecturer : • M.Pharm/Pharm.D • B.Pharm with 3 years of professional experience	 - Three - Four

In addition to regular faculty, the institution can have Bachelor of Medicine and Bachelor of Surgery (M.B.B.S) faculty as visiting faculty for teaching Anatomy & Physiology and Biochemistry and Clinical Pathology.

The minimum qualification and experience of the teaching faculty including the Principal/ Director/ Professor/ Head of Institution/ Head of Department and their payscales shall be as prescribed in the Minimum Qualification for Teachers in Pharmacy Institutions Regulations, 2014.

The pay scale of teaching staff shall not be less than the scale of pay prescribed by the State Government/ University Grants Commission/ All India Council for Technical Education for similar category of posts.

Provided that the above qualifications shall not apply to the incumbents appointed under the repealed Education Regulations.

Non-Teaching Staff

List of Non-Teaching staff for the D.Pharm course:

1.	Laboratory Technician (Qualification-Diploma in Pharmacy)	2
2.	Laboratory Attendent	4
3.	Office Superintendent	1
4.	Clerk-cum-Accountant	1
5.	Store-Keeper	1
6.	Typist	1
7.	Asstt. Librarian	1
8.	Peons	2
9.	Cleaners/Sweepers	4
10.	Gardener	1

Museum

Every institution shall maintain a museum of crude drugs, herbarium sheets, botanical specimens of the drugs and plants mentioned in the course. In addition, the following are recommended:-

1. Coloured slides of medicinal plants:
2. Display of popular patent medicines; and
3. Containers of common usage in medicines.

Library

Every institution shall maintain a library which should contain books mentioned in the syllabus and also the current pharmaceutical journals. There should be adequate place in the library for students and staff to refer books.

NOTE: The above requirements are the minimum requirements and the Institution is free to provide more-physical and teaching facility.

Equipments

The list of equipments & apparatus shall be as may be decided by the Pharmacy Council of India from time to time.

Appendix-B

(See regulation 16)

Conditions to be fulfilled by the Examining Authority

1. The Examining Authority shall be either a statutory Indian University or a body constituted by the Central or State Government. 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 examination; 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-A.
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 Chairman and at least one expert member of Examining Committee of the Examining Authority concerned with appointment of examiners and conduct of pharmacy examinations should be persons possessing pharmacy qualifications.

Appendix-C

[See regulations 18 (1)(iii)]

Conditions to be fulfilled by the institution to be recognised for giving practical training

1. The Institution, where practical training is given to student pharmacists, shall from time to time, if required, furnish such information as may be needed by the Pharmacy Council of India about the staff, accommodation and equipment of the Institution concerned and its working.
2. The Institution shall permit the Inspectors of the Pharmacy Council of India to inspect the premises at any reasonable time while the work is proceeding therein.
3. The Institution shall entrust some member or members of its staff, who shall be registered pharmacist (s), to look after the student pharmacists. Such members of the staff shall be responsible in this behalf to the Head of the Institution concerned.
4. The Institution shall provide such opportunity, accommodation, apparatus, materials and books of reference as may be required to enable the student pharmacists to undergo the practical training properly.

5. The number of student pharmacists that may be taken in any hospital, pharmacy and chemist and druggist licensed under the Drugs and Cosmetics Rules, 1945 made under the Drug and Cosmetics Act, 1940 shall not exceed four where there is one registered pharmacist engaged in the work in which the student pharmacist is undergoing practical training; where there is more than one registered pharmacist similarly engaged, the number shall not exceed two for each additional such registered pharmacist.

6. The Institution wishing to be recognised under regulation 18 shall apply in writing to the Secretary, Pharmacy Council of India stating its desire, to be so recognised.

7. Having satisfied that the institution shall follow the conditions laid down in these rules, the Pharmacy Council of India shall grant such recognition.

8. In the event of any question arising as to the interpretation or observance of these conditions the decision of the Pharmacy Council of India shall be final.

Appendix-D

[See regulations 19(1)]

Practical training contract form for pharmacists

SECTION I

This form has been issued to_____

(Name of student pharmacist)

son of /daughter of_____ residing at _____ who has produced evidence before me that he/she is entitled to receive the Practical Training as set out in the Education Regulations, 2020 made under section 10 of the Pharmacy Act, 1948.

Date: **The Head of Institution imparting practical training**

SECTION II

I_____ accept

(Name of the Student Pharmacist)

_____of_____

(Name of the Apprentice Master) (Name of the Institution)

_____

(Hospital or Pharmacy)

as my Apprentice Master for the above training and agree to obey and respect him /her during the entire period of my training.

(Student Pharmacist)

SECTION III

I,_____ accept

(Name of the Apprentice Master)

_____as a

(Name of the student pharmacist)

trainee and I agree to give him /her training facilities in my organisation so that during his /her training he /she may acquire:

1. Working knowledge of keeping of records required by the various Acts affecting the profession of pharmacy; and

2. Practical experience in -
    1) Stocking of Drugs and Medical Devices
    2) Inventory control procedures
    3) Handling of prescriptions
    4) Dispensing
    5) Patient counseling

I also agree that a Registered Pharmacist shall be assigned for his /her guidance.

(Apprentice Master)

(Name & address of the Institution)

SECTION IV

I certify that _____had

(Name of student pharmacists)

has undergone _____hours training spread over _____months in

accordance with the details enumerated in SECTION III.

_____

(The Head of Institution imparting practical training)

SECTION V

I certify that _____has

(Name of student pharmacists)

completed in all respect his practical training under regulation 18 of the Education Regulations, 2020 made under section 10 of the Pharmacy Act, 1948. He had his practical training in an Institution approved by the Pharmacy Council of India.

Date:

_____

(Head of the Academic Institution)

ARCHNA MUDGAL, Registrar-cum-Secy.

[ADVT.-III/4/Exty./298/2020-21]

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भारतीय भेषजी परिषद्

(भेषजी अधिनियम, 1948 के अंतर्गत स्थापित)

PHARMACY COUNCIL OF INDIA

(CONSTITUTED UNDER THE PHARMACY ACT, 1948)

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10 DEC 2014

The Secretary
(Health Department)
of All State Govts. & Union Territories

Sub: Comments on proposed amendments in Education Regulations, 1991 u/s 10(3) of the Pharmacy Act 1948.

Sir

The Pharmacy Council of India (PCI) is a statutory body working under the Ministry of Health and Family Welfare, Government of India, New Delhi. It is constituted under the Pharmacy Act, 1948 to regulate pharmacy education and practice of pharmacy profession in the country.

Section 10 of the Pharmacy Act 1948 empowers the Pharmacy Council of India to frame regulations called Education Regulations, prescribing the minimum standard of education required for qualification as a pharmacist. Accordingly the Education Regulations 1991(ER 1991) are in vogue which were published in Gazette of India, Part-III, Section-4, No. 28 dated 11th July, 1992.

With a view to adopt an integrated practice approach in delivery of clinical pharmaceutical services to the society, the ER 1991 are reviewed by a committee of experts appointed by the PCI. Based on the recommendations of the expert committee, amendments have been Proposed in the ER 1991. The provisions available in the ER 1991 and amendments proposed therein in the form of draft Education Regulations,2014 in tabulated form are enclosed as **Appendix-I.**

This Council would, appreciate to have the considered comments of the State Govts./U.Ts. on proposed amendments in ER-1991 within 3 months of issuance of this letter as required under sub-section (3) of section 10 of the Pharmacy Act, 1948. In the absence of any comments, within three months, it will be presumed that you have nothing to say in the matter and the proposed Regulations will be processed further accordingly.

Yours faithfully

(ARCHNA MUDGAL)
Registrar-cum-Secretary

Cc - alongwith enclosures forwarded to-

The Secretary
Government of India
Ministry of Health & Family Welfare
Department of Health (PMS Section)
Nirman Bhawan
New Delhi – 110 011

(ARCHNA MUDGAL)
Registrar-cum-Secretary

PHARMACY COUNCIL OF INDIA

EDUCATION REGULATIONS - 2014

FOR THE DIPLOMA IN PHARMACY (D. PHARM)

Education Regulations -1991	Education Regulations -2014
PHARMACY COUNCIL OF INDIA EDUCATION REGULATIONS, 1991 FOR THE DIPLOMA COURSE IN PHARMACY Regulations framed under section 10 of the Pharmacy Act, 1948. (As approved by the Government of India, Ministry of Health vide, letter No V. 13016/1/89-PMS dt. 2-8-1991 and notified by Pharmacy Council of India.) **No. 14-55/87 (Part)-PCI/2484-2887:-** 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:-	**PHARMACY COUNCIL OF INDIA EDUCATION REGULATIONS, 2014 FOR THE DIPLOMA IN PHARMACY(D. PHARM)** Regulations framed under section 10 of the Pharmacy Act, 1948. (As approved by the Government of India, Ministry of Health & F.W vide letter No dated and notified by the Pharmacy Council of India.) **No.** 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 1 **1.** ***Short title and commencement:-*** (1) These regulations may be called the Education Regulations, 1991. (2) They shall come into force on the date of their publication in the official Gazette. ***2. Qualification for Pharmacist:-*** The minimum qualification required for registration as a pharmacist shall be a pass in Diploma in pharmacy (Part I & Part II and satisfactory completion of Diploma in Pharmacy (Part-III). **or** Any other qualification approved by the Pharmacy Council of India as equivalent to the above. **3.** Diploma in Pharmacy Part-I and Part-II shall consist of a certificate of having passed the course of study prescribed in Chapter-II of these regulations. **4.** Diploma in Pharmacy Part-III shall consist of a certificate of having satisfactorily completed course of practical training as prescribed in Chapter-III of these regulations.	**CHAPTER 1** **1.** ***Short title and commencement:-*** (1) These regulations may be called the Education Regulations, 2014 for Diploma in Pharmacy. (2) They shall come into force on the date of their publication in the official Gazette. ***2. Qualification for Pharmacist:-*** The minimum qualification required for registration as a pharmacist shall be a pass in Diploma in Pharmacy (Part-I) & (Part-II) and satisfactory completion of practical training (Part-III). **or** Any other qualification approved by the Pharmacy Council of India as equivalent to the above. **3.** Diploma in Pharmacy (Part-I, Part-II and Part-III) shall consist of a certificate of having completed the course of study and passed the examination after satisfactorily completing the practical training as prescribed in Chapter-2 and Chapter-3 of these regulations.

CHAPTER 2	CHAPTER 2
5. Diploma in Pharmacy (Part-I and Part-II):-	***4. Diploma in Pharmacy (Part-I and Part-II):-***
Minimum qualification for admission to Diploma in Pharmacy Part-I course -A pass in any of the following examinations with Physics, Chemistry and Biology or Mathematics. (1) Intermediate examination in Science; (2) The first year of the three year degree course in Science, (3) 10+2 examination (academic stream) in Science; (4) Pre degree examination; (5) Any other qualification approved by the Pharmacy Council of India as equivalent to any of the above examination. Provided that there shall be reservation of seats for Scheduled Caste and Scheduled Tribes candidates in accordance with the instructions issued by the Central Govt. /State Govts./Union Territory Admns. as the case may be from time to time]	Minimum qualification for admission to Diploma in Pharmacy-A pass in 10+2 examination (regular science academic stream) with Physics, Chemistry and Biology or Mathematics. or Any other qualification approved by the Pharmacy Council of India as equivalent to the above examination. Provided that there shall be reservation of seats for Scheduled Castes and Scheduled Tribes candidates in accordance with the instructions issued by the Central Govt. /State Govts./Union Territory Admns. as the case may be, from time to time]
6. ***Duration of the course:-*** The duration of the course shall be for two academic years with each academic year spread over a period of not less than one hundred and eighty working days in addition to 500 hours practical training spread over a period of not less than 3 months.	***5. Duration of the course:-*** (1). The duration of the course shall be for two academic years. Each academic year shall be spread over a period of not less than one hundred and eighty working days. (2). In addition, there shall be a 500 hours of practical training spread over a period of not less than 3 months
7.*Course of study:-* The course of study for Diploma in Pharmacy Part-I and Diploma in Pharmacy Part-II shall include the subjects as given in the Tables I & II below. The number of hours devoted to each subject for its teaching in Theory and Practical, shall not be less than that noted against it in columns 2 and 3 of the Tables below.	**6.*Course of study:-*** The course of study for Diploma in Pharmacy Part-I and Diploma in Pharmacy Part-II shall include the subjects as given in the Tables I & II below. The number of hours devoted to each subject for its teaching in Theory and Practical, shall not be less than that noted against it in columns 2 and 3 of the Tables below. However, the course of study and practical training may be modified by the Pharmacy Council of India from time to time.

Table – I

Diploma in Pharmacy (Part I)

Subject	No. of hours of Theory	No. of hours of Practical
Pharmaceutics-I	75	100
Pharmaceutical Chemistry-I	75	75
Pharmacognosy-I	75	75
Biochemistry & Clinical Pathology	50	75
Human Anatomy & Physiology	75	50
Health Education & Community Pharmacy	50	-
	400	**375**
775 Hours		

Table – I

Diploma in Pharmacy (Part -I)

Subject	Number of hours		
	Theory	**Practical**	**Tutorial**
Pharmaceutics	75	75	25
Pharmaceutical chemistry	75	75	25
Pharmacognosy	75	75	25
Human Anatomy & Physiology	75	75	25
Social Pharmacy	75	75	25
Total	**375**	**300**	**125**
800 Hours			

Table – II

Diploma in Pharmacy (Part II)

Subject	No. of hours of Theory	No. of hours of Practical
Pharmaceutics-II	75	100
Pharmaceutical Chemistry-II	100	75
Pharmacology & Toxicology	75	50
Pharmaceutical Jurisprudence	50	-
Drug Store and Business	75	-
Hospital and Clinical Pharmacy	75	50
	450	**275**
725 Hours		

Table – II

Diploma in Pharmacy (Part II)

Subject	Number of hours		
	Theory	**Practical**	**Tutorial**
Pharmacology	75	75	25
Community Pharmacy & Management	75	75	25
Biochemistry & Clinical Pathology	75	75	25
Pharmacotherapeutics	75	--	25
Hospital & Clinical Pharmacy	75	--	25
Pharmacy Law & Ethics	75	--	25
	450	**225**	**150**
825 Hours			

	TABLE III **Diploma in Pharmacy (Part III)** **Practical Training – 500 hours** **Activities**

8.The syllabi for each subject of study in the said tables shall be as specified in Appendix A to these regulations.	**7.** The syllabus for each subject of study shall be as specified in Appendix – A to these regulations. The syllabus may, however, be modified by the Pharmacy Council of India from time to time
	1) Stocking of Drugs and Medical Devices 2) Inventory Control Procedures 3) Handling of prescriptions 4) Dispensing (250 hours) 5) Patient counseling

9. ***Approval of the authority conducting the course of study:-***	**8.** ***Approval of the authority conducting the course of study:-***
The course of regular academic study prescribed under regulation 7 shall be conducted in an institution, approved by the Pharmacy Council of India under sub-section (1) of Section 12 of the Pharmacy Act, 1948.	(1) No authority in a State shall start or conduct Diploma in Pharmacy course of study without the prior approval of the Pharmacy Council of India. (2) The course of regular academic study prescribed under regulation 6 shall be conducted in an institution, approved by the Pharmacy Council of India under sub-section (1) of Section 12 of the Pharmacy Act, 1948
Provided that the Pharmacy Council of India shall not approve any institution under this regulation unless it provides adequate arrangements for teaching in regard to building accommodation, equipment and teaching staff as specified in Appendix-B to these regulations	Provided that the Pharmacy Council of India shall not approve any institution under this regulation unless it provides adequate arrangements for teaching in regard to building accommodation, equipments and teaching staff etc. as specified in Appendix-B to these regulations which may be amended by the Pharmacy Council of India from time to time.
10. ***Examinations:-***	**9.** ***Examinations:-***
There shall be an examination for Diploma in Pharmacy (Part-I) to examine students of the first year course and an examination for Diploma in Pharmacy (Part-II) to examine students of the second year course . 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 of the Diploma in Pharmacy (Part-I) or Diploma in Pharmacy (Part-II), as the case may be. The examinations shall be of written and practical (including oral) nature, carrying maximum marks for each part of a subject, as indicated in Table III and IV below: -	1)There shall be an annual examination at the end of the academic year 2) If necessary, there shall be a supplementary examination for the students who are not able to pass Diploma in Pharmacy Part-I or Part-II, as the case may be, as per the criteria specified by the examining authority. 3) The examinations shall be of written and practical (including vica – voce) nature, carrying maximum marks for each part of a subject as indicated in Table IV and V below.

Table – III

DIPLOMA IN PHARMACY (PART-I) EXAMINATION

	Maximum marks for Theory			**Maximum marks for Practicals**		
	Examinat	*Sess	Total	Examin	*Sess	Total

Table – IV

DIPLOMA IN PHARMACY (PART-I) EXAMINATION

	Maximum marks for Theory			**Maximum marks for Practicals**		
	Exam	*Sess	Total	Exam	*Sess	Total

Subject	ion	ional		ation	ional		Subject	ination	ional		ination	ional	
Pharmaceutics-I	80	20	100	80	20	100	Pharmaceutics	80	20	100	80	20	100
Pharmaceutical Chemistry-I	80	20	100	80	20	100	Pharmaceutical chemistry	80	20	100	80	20	100
Pharmacognosy	80	20	100	80	20	100	Pharmacognosy	80	20	100	80	20	100
Biochemistry & Clinical Pathology	80	20	100	80	20	100	Human Anatomy & Physiology	80	20	100	80	20	100
Human Anatomy & Physiology	80	20	100	80	20	100	Social Pharmacy	80	20	100	-	-	-
Health Education & Community Pharmacy	80	20	100	-	-	-							
600 +400 = 1000							**500 + 400 = 900**						

*internal assessment

Table – IV

DIPLOMA IN PHARMACY (PART-II) EXAMINATION

Subject	Maximum marks for Theory			Maximum marks for Practicals		
	Examination	*Sessional	Total	Examination	*Sessional	Total
Pharmaceutics-II	80	20	100	80	20	100
Pharmaceutical Chemistry-II	80	20	100	80	20	100
Pharmacology & Toxicology	80	20	100	80	20	100
Pharmaceutical Jurisprudence	80	20	100	-	-	-
Drug Store and Business Management	80	20	100	-	-	
Hospital and Clinical Pharmacy	80	20	100	80	20	100
600 +400 = 1000						

Table – V

DIPLOMA IN PHARMACY (PART-II) EXAMINATION

Subject	Maximum marks for Theory			Maximum marks for Practicals		
	Examination	*Sessional	Total	Examination	*Sessional	Total
Pharmacology	80	20	100	80	20	100
Community Pharmacy & Management	80	20	100	80	20	100
Biochemistry & Clinical Pathology	80	20	100	80	20	100
Pharmacotherapeutics	80	20	100	-	-	-
Hospital and Clinical Pharmacy	80	20	100	-	-	-
Pharmacy law & Ethics	80	20	100	-		-
600 + 300 = 900						

*internal assessment

11. ***Eligibility for appearing at the Diploma in Pharmacy Part-I examination*****:-** Only such candidates who produce certificate from the Head of the Academic institution in which he /she has undergone the Diploma in Pharmacy Part-I course, in proof of his /her having regularly and satisfactorily undergone the course of study by attending not less than 75% of the classes held both in theory and in practical separately in each subject shall be eligible for appearing at the Diploma in Pharmacy (Part-I) examination. **12.** ***Eligibility for appearing at the Diploma in Pharmacy Part-II examination*****:-** Only such candidates who produce certificate from the Head of the academic institution in which he/she has undergone the Diploma in Pharmacy Part-II course, in proof of his /her having regularly and satisfactorily undergone the Diploma in Pharmacy Part-II course by attending not less than 75% of the classes held both in theory and in practical separately in each subject shall be eligible for appearing at the Diploma in Pharmacy (Part-II) examination.	**10.** ***Eligibility for appearing at the Diploma in Pharmacy Part-I and Part II examination*****:-** Only such candidates who produce certificate from the Head of the academic institution in which he has undergone the Diploma in Pharmacy course, in proof of his having regularly and satisfactorily undergone the course of study by attending not less than 75% of the classes held both in theory and in practical separately in each subject shall be eligible for appearing at the Diploma in Pharmacy (Part-I) or (Part II) examination, as the case may be.
13. ***Mode of examinations*****:-** (1) Each theory and practical examination in the subjects mentioned in Table-III & IV shall be of three hours duration. (2) A Candidate 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.	**11.** ***Mode of examinations*****:-** (1) Theory and Practical examination in the subjects mentioned in Tables – IV & V shall be of three hours examination. Both Theory and Practical are considered as two separate papers. (2) A candidate who fails in theory or practical examination of a subject shall re-appear for the failed subject. Theory and Practical of a particular subject are considered as individual subjects for the purpose of pass criteria. (3) Practical examination shall also consist of a viva-voce examination
14. ***[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 diploma in Pharmacy Part-I and diploma in Pharmacy Part II courses, shall be maintained for each student in the institution and 20 marks for each theory and 20 marks for each practical subject shall be allotted as sessional. (2) There shall be at least two periodic sessional examinations during each academic year .The highest aggregate of any two performances shall form the basis of calculating sessional marks.	**12.** ***Award of sessional marks and maintenance of records*****:-** (1) A regular record of both theory and practical class work done and examinations held in an institution imparting training for diploma in Pharmacy Part-I and diploma in Pharmacy Part-II courses shall be maintained for each student in the institution and 20 marks for each theory and 20 marks for each practical subject shall be allotted as sessional marks. (2) There shall be two or more periodic sessional (internal assessment) examinations during each academic year. The highest aggregate of any two performances shall form the basis of calculating sessionals marks

(3) The sessional marks in practicals shall be allotted on the following basis:- (i) Actual performance in the sessional examination 10marks (ii) Day to day assessment in the practical classwork 10marks.	(3) The sessional marks in practical shall be allotted on the following basis:- (i) Actual performance in the sessional/spacing examination=10 marks (ii) Day to day assessment in the practical class/spacing work= 10 marks.
15. ***Minimum marks for passing the examination*****:** A student shall not be declared to have passed Diploma in Pharmacy examination unless he /she secures at least 50% marks in each of the subject separately in the theory examinations, including sessional marks and at least 50% marks in each of the practical examinations including sessional marks. The candidates securing 60% marks or above in aggregate in all subjects in a single attempt at the Diploma in Pharmacy (Part-I) or Diploma in Pharmacy (Part-II) examinations shall be declared to have passed in first class the Diploma in Pharmacy (Part-I) or Diploma in Pharmacy (Part-II) examinations, as the case may be. Candidates 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.	**13.** ***Minimum marks for passing the examination*****:-** A student shall not be declared to have passed Diploma in Pharmacy examination unless he secures at least 40% marks in each of the subjects separately in the theory as well as the practical examinations including sessional marks. The candidates securing 60% marks or above in aggregate in all subjects shall be declared to have passed in first class. The candidates securing 75% marks or above in any subject or subjects shall be declared to have passed with distinction in that subject or those subjects.
16. ***Eligibility for promotion to Diploma in Pharmacy (Part-II)*****:-** All candidates who have appeared for all the subjects and passed the Diploma in Pharmacy Part-I examination are eligible for promotion to the Diploma in Pharmacy Part-II class. However, failure in more than two subject shall debar him/ from promotion to the Diploma in Pharmacy Part-II class.	**14.** ***Eligibility for promotion to Diploma in Pharmacy (Part-II)*****:-** All candidates who have appeared for all the subjects and passed the Diploma in Pharmacy Part-I examination are eligible for promotion to the Diploma in Pharmacy Part-II class. However, the students may be promoted to second year with full carryover of all subjects.
17. ***Improvement of sessional marks:-*** Candidates who wish to improve sessional marks can do so, by appearing in two additional sessional examinations during the next academic year. The average score of the two examination shall be the basis for improved sessional marks in theory .The sessional of practicals shall be improved by appearing in additional practical examinations. Marks awarded to a candidate for day to day assessment in the practical class can not be improved unless he /she attends a regular course of study again.	**15.** ***Improvement of sessional marks:-*** The candidates who wish to improve sessional marks can do so by appearing in two additional sessional examinations during the next academic year. The average score of the two examinations shall be the basis for improved sessional marks in theory as well as in practical. Marks awarded to a candidate for day to day assessment in the practical class cannot be improved unless he attends a regular course of study again.

18. ***Approval of examinations:-*** The examinations mentioned in regulations 10 to 13 and 15 shall be held by an authority herein after referred to as the Examining Authority in a State , 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-C to these regulations.	**16.** ***Approval of examinations:-*** The examinations mentioned in regulations 8 to 11 and 12 shall be held by an authority (herein=after referred to as the examining authority) in a State 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-C to these regulations.
***19. Certificate of passing examination for Diploma in Pharmacy (Part-II)*:-** Certificate to having passed the examination for the Diploma in Pharmacy Part II shall be granted by the Examining Authority to a successful student.	***17. Certificate of passing examination for Diploma in Pharmacy (Part-II)*:-** Certificate of having passed the Diploma in Pharmacy Part-II shall be granted by the examining authority to a successful student.
20. Period and other conditions for Practical Training:- (1) After having appeared in Part-II examination for the Diploma in Pharmacy, conducted by Board/University or other approved Examining Body or any other course accepted as being equivalent by the Pharmacy Council of India, a candidate shall be eligible to undergo practical training in one or more of the following institutions namely: (i) Hospitals/Dispensaries run by Central/State Gov (ii)A Pharmacy, Chemist and Druggist licensed under the Drugs and Cosmetics Rules, 1945 made under the Drugs and Cosmetics Act, 1940 (23 of 194 (iii) Drugs manufacturing Unit licensed under the Drugs and Cosmetics Act, 1940 & rules made thereunder. (2) The institutions referred in sub-regulation (1) shall be eligible to impart training subject to the condition that number of student pharmacists that may be taken in any hospital, pharmacy, chemist and druggist and drugs manufacturing unit licensed under the Drugs and Cosmetics Rules, 1945 made under the Drugs and Cosmetics Act, 1940 shall not exceed two where there is one registered pharmacist engaged in the work in which the student pharmacist is undergoing practical training, where there is more than one registered pharmacist similarly engaged, the number shall not exceed one	**18. Period and other conditions for practical training**:- (1) After having appeared in Part-II examination for the Diploma in Pharmacy held by an approved examining authority, a candidate shall be eligible to undergo practical training in one or more of the following institutions namely: (i) Hospitals/Dispensaries run by Central Govt. /State Govts. (ii) A pharmacy licensed for retail sale of drugs under the Drugs and Cosmetics Rules, 1945 having the services of registered pharmacists. (iii) Hospitals and dispensaries other than those specified in sub-regulation (i) and (ii) above for the purpose of giving practical training shall have to be recognized by the Pharmacy Council of India on fulfilling the conditions specified in Appendix "D" to these regulations. (2) The institutions referred in sub-regulation (1) shall be eligible to impart training subject to the condition that number of student pharmacists that may be taken in any hospital, dispensary or pharmacy licensed under the Drugs and Cosmetics Rules, 1945 shall not exceed **FOUR** where there is one registered pharmacist. Where there are more than one registered pharmacists the number shall not exceed **TWO** for each additional such registered pharmacists.

for each additional such registered pharmacist. (3) Hospital and Dispensary other than those specified in sub-regulation (1) for the purpose of giving practical training shall have to be recognised by Pharmacy Council of India on fulfilling the conditions specified in Appendix "D to these regulations. (4) In the course of practical training, the trainee shall have exposure to (i) Working knowledge of keeping of records required by various Acts concerning the profession of Pharmacy, and (ii) Practical experience in- (a) the manipulation of pharmaceutical apparatus in common use. (b) the reading, translation and copying of prescription including checking of doses; (c) the dispensing of prescription illustrating the commoner methods of administering medicaments; and (d) the storage of drugs and medical preparations (5) The practical training shall be not less than five hundred hours spread over a period of not less than three months, provided that not less than two hundred and fifty hours are devoted to actual dispensing of prescriptions	(3) In the course of practical training, the trainee shall have exposure to- (i) Working knowledge of keeping of records required by various Legislative Acts concerning the profession of pharmacy; and (ii) Practical experience in activities mentioned in Table III under regulation 6 of these regulations. (5) The practical training shall be of not less than five hundred hours spread over a period of not less than three months provided that not less than two hundred and fifty hours are devoted to actual dispensing of prescriptions.
21. Procedure to be followed prior to commencing of the training:- (1) The head of an academic training institution, on application, shall supply in triplicate 'Practical Training Contract Form for qualification as a Pharmacist' (hereinafter referred to as the Contract Form) to candidate eligible to undertake the said practical training. The Contract Form shall be as specified in Appendix-E to these regulations. (2) The Head of an academic training institution shall fill section I of the Contract Form. The trainee shall fill Section II of the said Contract Form and the Head of the institution agreeing to impart the training (hereinafter referred to as the Apprentice Master) shall fill Section III of the said Contract From. (3) It shall be the responsibility of the trainee to ensure that one copy (hereinafter referred to as the	**21. Procedure to be followed prior to commenment of the training**:- (1) The head of an academic training institution, on application, shall supply in triplicate 'Practical Training Contract Form for Pharmacist' (hereinafter referred to as the Contract Form) to the candidate eligible to undertake the said practical training. The Contract Form shall be as specified in Appendix-E to these regulations. (2) The head of an academic training institution shall fill Section I of the Contract Form. The trainee shall fill Section II of the said Contract Form and the head of the institution agreeing to impart the training (hereinafter referred to as the Apprentice Master) shall fill Section III of the said Contract From. (3) It shall be the responsibility of the trainee to ensure that one copy (hereinafter referred to as the first copy

first copy of the Contract Form) so filled is submitted to the Head of the academic training institution and the other two copies (hereinafter referred to as the Second copy and the third copy) shall be filed with the Apprentice Master (if he so desires) or with the trainee pending completion of the training.	of the Contract Form) so filled is submitted to the head of the academic training institution and the other two copies (hereinafter referred to as the second copy and the third copy) shall be filed with the Apprentice Master (if he so desires) or with the trainee till completion of the training.
22. Certificate of passing Diploma in Pharmacy Part-III:- On satisfactory completion of the apprentice period, the Apprentice Master shall fill SECTION IV of the second copy and third copy of the Contract Form and cause it to be sent to the head of the academic training institution who shall suitably enter in the first copy of the entries from the second copy and third copy and shall fill SECTION V of the three copies of Contract Form and thereafter hand over both the second copy and third copy to the trainee. This, if completed in all respects, shall be regarded as a certificate of having successfully completed the course of Diploma in Pharmacy (Part-III).	**20. Certificate of passing Diploma in Pharmacy Part-III**:- On satisfactory completion of the practical training period, the Apprentice Master shall fill Section IV of the second copy and third copy of the Contract Form and cause it to be sent to the head of the academic training institution who shall suitably enter in the first copy of the entries from the second copy and the third copy and shall fill Section V of the three copies of Contract Form and thereafter hand over both the second copy and the third copy to the trainee. This Contract Form, completed in all respects, shall be regarded as a certificate of having successfully completed the course of Diploma in Pharmacy (Part-III).
23. Certificate of Diploma in Pharmacy: A certificate of Diploma in Pharmacy shall be granted by the Examining Authority to a successful candidate on producing certificate of having passed the Diploma in Pharmacy Part I and Part II and satisfactory completion of practical training for Diploma in Pharmacy (Part-III).	***21. Certificate of Diploma in Pharmacy:*** A certificate of Diploma in Pharmacy shall be granted by the examining authority to a successful candidate on producing certificates of having passed the Diploma in Pharmacy Part I and Part II and satisfactory completion of practical training for Diploma in Pharmacy (Part-III).
24. Miscellaneous: No course of training in pharmacy shall be considered for approval under regulation 18 unless it satisfies all the conditions prescribed under these regulations	
25. Repeal and Savings: (1) The Education Regulations, 1981 (hereinafter referred to as the said regulations) published by the Pharmacy Council of India vide No 14-55/79 Pt. I/PCI/4235-4650 dt. 8th July 1981 is hereby repealed. (2) Notwithstanding such repeal, (a) Anything done or any action taken under the said regulations shall be deemed to have been done or taken under the corresponding provision of these regulations. (b) A person who was admitted as a student	***22. Repeal and Savings:*** (1) The Education Regulations, 1991 (hereinafter referred to as the said regulations) published by the Pharmacy Council of India vide No. dt. is hereby repealed. (2) Notwithstanding such repeal, (a) Anything done or any action taken under the said regulations shall be deemed to have been done or taken under the corresponding provision of these regulations. (b) A person who has admitted as a student under the said regulations to the course of training for Diploma in Pharmacy and who had not passed the examination at the

under the said regulation to the course of training for Diploma in Pharmacy and who had not passed the examination at the commencement of these regulations shall be required to pass the examination in accordance with the provision of the said regulation as if these regulations had not come into force:	commencement of these regulations shall be required to pass the examination in accordance with the provisions of the said regulations as if these regulations had not come into force:
Provided however, the Examining Authority in a particular State may fix a date after which the examinations under the said Regulations shall not be conducted.	Provided that the examining authority in a particular State may fix a date after which the examination under the said regulations shall not be conducted and this date shall not be more than four academic years after the publication of these regulations.

Diploma in Pharmacy Part-I

Sl.No.	Subjects	Number of Hours		
		Theory	**Practical**	**Tutorial**
1.	Pharmaceutics	75	75	25
2.	Pharmaceutical Chemistry	75	75	25
3.	Pharmacognosy	75	75	25
4.	Human Anatomy and Physiology	75	75	25
5.	Social Pharmacy	75	--	25
	Total	**375**	**300**	**125**
		800		

Diploma in Pharmacy Part-II

Sl.No.	**Subjects**	**Number of Hours**		
		Theory	**Practical**	**Tutorial**
1.	Pharmacology	75	75	25
2.	Community Pharmacy & Management	75	75	25
3.	Biochemistry & Clinical Pathology	75	75	25
4.	Pharmacotherapeutics	75	--	25
5.	Hospital & Clinical Pharmacy	75	--	25
6.	Pharmacy Law & Ethics	75	--	25
	Total	**450**	**225**	**150**
		825		

Diploma in Pharmacy Part-I

Sl.No.	Subjects	Number of Hours		
		Theory	**Practical**	**Tutorial**
1.	Pharmaceutics	75	75	25
2.	Pharmaceutical Chemistry	75	75	25
3.	Pharmacognosy	75	75	25
4.	Human Anatomy and Physiology	75	75	25
5.	Social Pharmacy	75	--	25
	Total	**375**	**300**	**125**
		800		

Diploma in Pharmacy Part-II

Sl.No.	Subjects	Number of Hours		
		Theory	**Practical**	**Tutorial**
1.	Pharmacology	75	75	25
2.	Community Pharmacy & Management	75	75	25
3.	Biochemistry & Clinical Pathology	75	75	25
4.	Pharmacotherapeutics	75	--	25
5.	Hospital & Clinical Pharmacy	75	--	25
6	Pharmacy Law & Ethics	75	--	25
	Total	**450**	**225**	**150**
		825		

1. Pharmaceutics

Scope: This course is designed to impart basic knowledge on the art and science of formulating and dispensing of different dosage forms.

Objectives: Upon completion of the course, the student shall be able to understand

- the formulation aspects of different dosage forms
- the evaluation of pharmaceutical dosage forms
- the importance of good manufacturing practices.

Theory **75 Hours (3 hrs/week)**

Chapter	Topic	Hours
1	• History of profession of Pharmacy in India in relation to Pharmacy education, industry and associations. • Pharmacy as a career • Pharmacopoeia: Introduction to IP, BP, USP, NF and extra pharmacopoeia. Salient features of Indian Pharmacopoeia	5
2	**Prescription**: Definition, significance, parts and handling of prescription. **Posology**: Definition, factors affecting dose selection. Calculation of doses for infants & children based on age, body weight and body surface area	4
Pharmaceutical Dosage forms: Definition, classification, advantages, disadvantages, formulation, storage and quality control tests of		
3	**Tablets** – coated and uncoated	6
4	**Capsules** - hard and soft gelatin capsules	4
5	**Liquid oral preparations**- solution, syrup, elixir, emulsion, suspension, dry powder for reconstitution	6
6	**Topical preparations** - ointments, creams, pastes, gels, liniments and lotions Suppositories and pessaries	6
7	Nasal preparations	4
8	**Powders and granules** - Insufflations, dusting powders, effervescent powders and effervescent granules	4
9	**Sterile formulations** – Injectables, eye drops and eye ointments	6
10	**Pharmaceutical Aerosols**: Definition, types of aerosol systems, propellants, containers and valves	4
11	**Immunological products**: Definition, classification of sera, vaccines, toxoids and storage conditions	4
12	**Quality assurance**: Definition and concept of quality control, quality assurance, good manufacturing practice (GMP), calibration and validation	4
13	**Packaging materials**: Types, selection criteria, advantages and disadvantages of glass, plastic, metal, rubber as packaging materials	8
14	**Pharmaceutical aids:** Organoleptics and preservatives: Definition, types with examples and uses	5
15	**Novel drug delivery systems:** Introduction, Classification with examples	5

Practicals **75 Hours (3 hrs/week)**

Minimum of 25 experiments to be conducted

1. Formulation of the following dosage forms
- Liquid orals: Simple syrup, Piperazine citrate elixir, Aqueous Iodine solution, Strong Iodine solution
- Emulsion: Castor oil emulsion, Cod liver oil emulsion
- Suspension: Calamine lotion, Magnesium hydroxide mixture
- Ointments: Simple ointment base, Sulphur ointment
- Dry powder: Effervescent powder, Dusting powder,
- Sterile Injections: Calcium gluconate Injection
- Capsules: Indomethacin capsules, Tetracycline capsules

2 Demonstration for tablet manufacturing including all types of coated tablets

3. Demonstration of methods for evaluation of all types of above formulations as per IP

Recommended Books

1. History of Pharmacy in India by Dr. Harikishan Singh
2. Indian Pharmacopoeia, Govt. of India Publication
3. A Text book of Pharmaceuticals Formulation by B.M. Mithal, Vallabh Prakashan.
4. Bentleys' Text book of Pharmaceutics, 8th Edition, editor E.A. Rawlins, published by Elsevier Int.,
5. The Theory and Practice of Industrial Pharmacy. Leon Lachman, Herbert Lieberman and Joseph Kanig, Editors, Lea and Febiger, Philadelphia. Latest edition Verghese publishing House

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2. Pharmaceutical Chemistry

Scope: This course is designed to impart basic knowledge on the chemistry of drugs and pharmaceuticals. The course gives knowledge of chemical structure, storage conditions and medicinal uses of organic and inorganic chemicals and quality control aspects of pharmaceuticals.

Objectives: Upon completion of the course, the student shall be able to understand

- the various impurities in pharmaceuticals and tests to identify them
- the chemical nature and medicinal uses of drug substances
- the storage conditions of pharmaceuticals
- the quantitative and qualitative analysis of official compounds

Theory **75 Hours (3 hrs/week)**

Chapter	Topic	Hours
1	**Introduction to Pharmaceutical chemistry:** Scope and objectives **Sources and types of errors:** Accuracy, precision, significant figures. **Impurities in Pharmaceuticals**: Source and effect of impurities in pharmacopoeial substances, importance of limit test, Principle and procedures of Limit tests for chlorides, sulphates, iron, heavy metals and arsenic.	8
2	**Volumetric analysis**: Fundamentals of volumetric analysis, Acid-base titration, Non-aqueous titration, precipitation titration, complexometric titration, redox titration **Gravimetric analysis:** Principle and method.	8
3	**Inorganic Pharmaceuticals**: Pharmaceutical formulations, storage conditions and uses of • Haematinics: Ferrous sulphate, Ferrous gluconate • Antacids: Aluminium hydroxide gel, Magnesium hydroxide • Anti microbial agents: Hydrogen peroxide, Boric acid, Bleaching powder • Dental products: Calcium carbonate, Sodium fluoride • Medicinal gases: Carbon dioxide, nitrous oxide, oxygen	7
4	Introduction to nomenclature of organic chemical systems with particular reference to heterocyclic compounds containing up to Three rings	2
Study of the following category of medicinal compounds with respect to classification, chemical name, chemical structure (compounds marked with*) uses, stability and storage conditions, different types of formulations and their popular brand names		
5	**Drugs acting on Central Nervous System** • **Anaesthetics:** Thiopental sodium*, Ketamine hydrochloride*. • **Sedatives and Hypnotics:** Diazepam*, Alprazolam*, Nitrazepam, Phenobarbital*, **Antipsychotics:** Chloropromazine hydrochloride*, Haloperidol*, Droperidol, Risperidone*, Sulperide* • **Anticonvulsants:** Phenytoin*, Ethosuximide, Carbamazepine*, Clonazepam, Primidone, Valproic acid*, Gabapentin* • **Anti-depressants:** Amitriptyline hydrochloride*, Imipramine hydrochloride*, Fluoxetine*.	9
6	**Drugs acting on Autonomic Nervous System** • **Sympathomimetic agents:** Direct acting**:** Nor-epinephrine, Epinephrine, Phenylephrine, Dopamine, Terbutaline, Salmeterol, Salbutamol, Albuterol, Naphazoline, Tetrahydrazoline, Oxymetazoline. Indirect acting agents**:** Hydroxyamphetamine, Pseudoephedrine, Propylhexadrine. Agents with mixed mechanism**:** Ephedrine, Metaraminol. • **Adrenergic Antagonists:** Alpha adrenergic blockers: Tolazoline, Phentolamine,	9

	Phenoxybenzamine, Prazosin, Doxazosin. Beta adrenergic blockers: Propranolol, Practolol, Acebutolol, Atenolol, Esmolol, Metoprolol, Labetolol and Carvedilol • **Cholinergic drugs and related agents:** Direct acting agents: Acetylcholine, Carbachol, Bethanechol, Methacholine and Pilocarpine. Cholinesterase inhibitors: Neostigmine, Pyridostigmine, Edrophonium chloride, Tacrine hydrochloride, Ambinonium chloride, Pralidoxime chloride, Isofluorphate, Echothiophate iodide, Parathione, Malathion. • **Cholinergic Blocking agents:** Solanaceous alkaloids and analogues: Atropine sulphate, Homatropine hydrogen bromide, Ipratropium bromide. Synthetic cholinergic blocking agents: Tropicamide, Cyclopentolate hydrochloride, Clindinium bromide, Dicyclomine hydrochloride, Procylidine hydrochloride Tridihex ethylchloride, Isopropamide iodide, and Ethopropazine hydrochloride	
7	**Drugs acting on Cardiovascular System** • **Anti-arrythmic Drugs**: Quinidine sulphate, Procainamide hydrochloride, Verapamil, Diltiazem hydrochloride, Phenytoin sodium, Lidocaine hydrochloride, Tocainide hydrochloride, Mexiletine hydrochloride, Lorcainide hydrochloride, amiodarone and Sotalol. • **Anti-hypertensive Agents**: Propranolol, timolol, Captopril, Lisinopril, Enalapril, Benzapril hydrochloride, Quinapril hydrochloride, Methyldopate hydrochloride, Clonidine hydrochloride. Reserpine, Hydralazine hydrochloride, Nifedipine, • **Antianginal agents**: isosorbide dinitrate, amyl nitrite	5
8	**Diuretics:** acetazolamide, frusemide, bumetanide, chlorthiazide, benzthiazide, xipmide, spiranolactone	2
9	**Hypoglycemic agents:** insulin and its preparations, metformin, tolbutamide, glibenclamide, glipizide, Glimepiride, pioglitazone, ripaglinide	3
10	**Analgesic and anti-inflammatory agents:** Morphine analogues, Narcotic antagonists; Nonsteroidal anti inflammatory agents (NSAIDs) aspirin, diclofenac, ibuprofen, piroxicam, celecoxib, mefenamic acid, paracetamol	3
11	**Anti-infective agents** **Antifungal agents:** Amphotericin-B and Griseofulvin, Econoazole nitrate, Miconazole, Ketoconazole, Itraconazole, Fluconazole, Naftifine hydrochloride, Tolnaftate. **Urinary tract anti-infective agents:** Nalidixic Acid, Cinoxacin, Norfloxacin, Ciprofloxacin, Ofloxacin, Lomefloxacin, Sparfloxacin. **Anti-tubercular Agents:** INH, Ethionamide, ethambutol, Pyrazinamide, Para amino salicylic acid, Rifampicin **Antiviral agents:** Amantadine hydrochloride, Idoxuridine, Acyclovir, Gancyclovir, Foscarnet, Zidovudine, Lamivudine, Ribavirin **Antimalarials:** Quinine sulphate, Chloroquine phosphate, Primaquine phosphate, Quinacrine hydrochloride, Mefloquine, Cycloguanil , proguanil, Pyrimethamine **Sulfonamides:** History and development, mechanism of action sulfanilamide, sulfadiazine, sulfamethoxazole, sulfacetamide, mefenide acetate and cotrimoxazole	8
12	**Antibiotics:** Penicillin G, ampicillin, amoxicillin, cloxacillin, clavulanic acid, cephalosporins, streptomycin, neomycin, tetracycline, doxycycline, minocycline, erythromycin, azithromycin, chloramphenicol, clindamycin.	8
13	**Anti-neoplastic agents:** Meclorethamine, Cyclophosphamide, Busulfan, Thiotepa, Mercaptopurine, Fluorouracil, Floxuridine, Cytarabine, Methotrexate, Azathioprine, Dactinomycin, Daunorubicin hydrochloride, Doxorubicin hydrochloride, Etoposide, Vinblastin sulphate, Vincristin sulphate, Cisplatin, Mitotane and bromostanolone propionate.	3

Practical **75 hours (3 hours/week)**

Minimum of 25 practicals should be conducted

1	**Limit tests** • Limit test for chlorides • Limit test for sulphate • Limit test for Iron • Limit test for heavy metals
2	Identification tests for Anions and cations as per IP
3	**Fundamentals of volumetric analysis** Preparation of standard solution and standardization of Sodium hydroxide, ceric ammonium sulfate, potassium permanganate
4	**Assay of the following compounds** • Ferrous sulphate- by redox titration • Calcium gluconate-by complexometry • Sodium chloride-by Modified Volhard's method • Ascorbic acid by cerimetry • Metronidazole by Non Aqueous Titration • Ibuprofen by alkalimetry
5	**Fundamentals of preparative organic chemistry** Determination of Melting point and boiling point of organic compounds
6	**Preparation of organic compounds.** • Acetanilide from aniline • Aspirin from salicylic acid
7	**Identification and test for purity of pharmaceuticals** Aspirin, caffeine, paracetamol, sulfanilamide

Recommended Books

1. Medicinal & Pharmaceutical chemistry by Harikishan Singh and VK Kapoor
2. Wilson and Gisvold's Text book of Organic Medicinal and pharmaceutical Chemistry
3. Practical Organic Chemistry by Mann and Saunders.
4. Practical Pharmaceutical Chemistry, Volume- I & II by Beckett and J. B. Stanlake
5. Indian Pharmacopoeia
6. Vogel's text book of Practical Organic Chemistry

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3. Pharmacognosy

Scope: This course is designed to impart knowledge of medicinal uses of various naturally occurring drugs. It also emphasizes the study of evaluation of crude drugs, alternative system of medicine nutraceuticals and herbal cosmetics.

Objectives: Upon the completion of the course, the student shall be able to

- Identify the important crude drugs of natural origin
- Know the herbs used as nutraceuticals and cosmeceuticals
- Understand the principles of alternative system of medicines
- Understand the importance of quality control of drugs of natural origin

Theory **75 Hours (3Hrs/Week)**

1	Definition, history, present status and scope of Pharmacognosy	**02**
2	**Classification of drugs:** • Alphabetical • Taxonomical • Morphological • Pharmacological • Chemical • Chemo-taxonomical	**04**
3	**Quality control of crude drugs:** • Different methods of adulteration of crude drugs • Evaluation of crude drugs	**06**
4	Brief outline of occurrence, distribution, isolation, identification tests, therapeutic activity and pharmaceutical applications of alkaloids, terpenoids, glycosides, volatile oils, tannins and resins.	**06**
5	Biological source, chemical constituents and therapeutic efficacy of the following categories of crude drugs. Laxatives - Aloe, Castor oil, Ispaghula, Senna Cardiotonics - Digitalis, Arjuna Carminatives and G.I. regulators -Coriander, Fennel, Cardamom, Ginger, Clove, Black Pepper, Asafoetida, Nutmeg, Cinnamon Astringents - Myrobalan, Black Catechu Drugs acting on nervous system - Hyoscyamus, Belladonna, Ephedra, Opium, Tea leaves, Coffee seeds, Coca Anti-hypertensive - Rauwolfia Anti-tussives - Tolu Balsam Anti-rheumatics - Colchicum seed Anti-tumor - Vinca, Podophyllum Anti-leprotics - Chaulmoogra oil Antidiabetics - Pterocarpus, Gymnema Diuretics - Gokhru, Punarnava Anti-dysentrics - Ipecacuanha Antiseptics and disinfectants - Benzoin, Myrrh, Neem, Turmeric Antimalarials - Cinchona, Artemisia Oxytocics - Ergot Vitamins - Cod liver oil, Shark liver oil	**34**

	Enzymes - Papaya, Diastase, Pancreatin, Yeast Pharmaceutical Aids - Kaolin, Lanolin, Beeswax, Acacia, Tragacanth, Sodium alginate, Agar, Guar gum, Gelatin Miscellaneous - Squill, Galls, Pale catechu, Aswagandha, Vasaka, Tulsi, Guggul	
6	**Plant fibers used as surgical dressings:** Cotton, silk, wool and regenerated fibers Sutures – Surgical Catgut and Ligatures	**03**
7	1. **Basic principles involved in the alternative system of medicine like:** Ayurveda, Sidha, Unani and Homeopathy 2. **Method of preparation of Ayurvedic formulations in like:** Arista, Asava, Gutika, Taila, Churna, Lehya and Bhasma	**08**
8	Role of medicinal and aromatic plants in national economy and their export potential	**02**
9	**Herbs as health food:** Brief introduction and therapeutic applications of: Nutraceuticals, Antioxidants, Pro-biotics, Pre-biotics, Dietary fibers, Omega-3-fatty acids, Spirulina, Carotenoids, Soya and Garlic	**05**
10	**Herbal cosmetics:** Sources, chemical constituents, commercial preparations, therapeutic and cosmetic uses of : Aloe vera gel, Almond oil, Lavender oil, Olive oil, Rosemary oil, Sandal Wood oil	**05**

Practicals **75 Hours (3 hrs/week)**

Minimum of 25 experiments to be conducted

1 Morphological Identification of drug :
Ispaghula, Senna, Coriander, Fennel, Cardamom, Ginger, Nutmeg Black Pepper, Cinnamon, Clove, Ephedra, Rauwolfia, Gokhru, Punarnava, Cinchona, Agar.

2 Gross anatomical studies (Transverse Section) of the following drugs:
Senna, Datura, Cinnamon, Cinchona, Coriander, Fennel, Clove, Ginger, Nuxvomica, Ipecacuanha.

3 Physical and chemical tests for evaluation of drugs
Asafoetida, Benzoin, Pale catechu, Black catechu, Castor oil, Acacia, Tragacanth, Agar, Guar gum, Gelatin.

Recommended Books

1. Text book of Pharmacognosy by C. K. Kokate, S. B. Gokhale, A.P. Purohith, Nirali Prakashan
2. Text book of Pharmacognosy by C.S. Shah and J. S. Quadry, CBS Publishers & Distributors Pvt. Ltd.
3. Text Book of Pharmacognosy by T. E. Wallis. CBS Publishers & Distributors Pvt. Ltd.
4. Study of crude drugs by M. A. Iyengar, Manipal Press Ltd, Manipal
5. Powder crude drugs by M. A. Iyengar, Manipal Press Ltd, Manipal
6. Anatomy of crude drugs by M. A. Iyengar, Manipal Press Ltd, Manipal

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4. Human Anatomy and Physiology

Scope: This course is designed to impart basic knowledge on the structure and functions of the human body. It helps in understanding both homeostasis mechanism and homeostatic imbalances of various systems of human body.

Objectives: Upon the completion of the course, the student shall be able to

- Understand the structure and functions of the various organs of the human body
- Understand the various homeostatic mechanisms and their imbalance
- Perform the haematological tests and also record the blood pressure, heart rate, pulse rate and respiratory volumes

Theory **75 Hours (3 hrs/week)**

Chapter	Topic	Hours
1	Scope of Anatomy and Physiology. Definition of various terminology	2
2	**Structure of Cell**: components and its functions	2
3	**Tissues of the human body**: Epithelial, Connective, Muscular and Nervous tissues – their sub-types and characteristics.	4
4	a) **Osseous system** : structure and functions of bones of axial and appendicular skeleton b) Classification, types and movements of joints, disorders of joints	3 3
5	**Haemopoetic system** • Composition and functions of blood • Process of Haemopoesis • Characteristics and functions of RBC's, WBC's and platelets • Mechanism of Blood Clotting • Importance of Blood groups	8
6	**Lymphatic system** • Lymph and lymphatic system, composition, function and its formation. • Structure and functions of spleen and lymph node.	3
7	**Cardiovascular system** • Anatomy and Physiology of heart • Blood vessels and circulation (Pulmonary, coronary and systemic circulation) • Cardiac cycle and Heart sounds, Basic knowledge of ECG • Blood pressure and its regulation	8
8	**Respiratory system** • Anatomy of respiratory organs and their functions. • Regulation of respiration. • Respiratory volumes and capacities (definition)	4
9	**Digestive system** • Anatomy and Physiology of GIT. • Anatomy and functions of accessory glands. • Physiology of digestion and absorption	8
10	**Skeletal muscles** • Histology • Physiology of muscle contraction • Disorder of skeletal muscles	2
11	**Nervous system** • Classification of nervous system	8

	• Anatomy and physiology of cerebrum, cerebellum, mid brain • Function of hypothalamus, medulla oblongata and basal ganglia • Spinal cord-structure and reflexes • Names and functions of cranial nerves. • Anatomy and physiology of sympathetic and parasympathetic nervous system (ANS)	
12	**Sense organs** Anatomy and physiology of • Eye, • Ear, • Skin • Tongue and nose	6
13	**Urinary system** • Anatomy and physiology of urinary system • Physiology of urine formation • Renin - angiotensin system • Clearance tests and micturition.	4
14	**Endocrine system (Hormones and their functions)** • Pituitary gland • Adrenal gland • Thyroid and parathyroid gland • Pancreas and gonads	6
15	**Reproductive system** • Anatomy of Male and female reproductive system • Physiology of menstruation • Spermatogenesis and Oogenesis • Pregnancy and parturition	4

Practicals **75 Hours (3 hrs/week)**

List of experiments

1. Study of compound microscope
2. General techniques for the collection of blood
3. Microscopic examination of Epithelial tissue, Cardiac muscle, Smooth muscle, Skeletal muscle, connective tissue and Nervous tissue.
4. Study of Human Skeleton-Axial skeleton and appendicular skeleton
5. Study of appliances used in Haematological experiments
6. Determination of
   a. Blood group
   b. ESR
   c. Haemoglobin content of blood
   d. Bleeding time and Clotting time
7. Determination of WBC count of blood
8. Determination of RBC count of blood
9. Determination of Differential count of blood
10. Recording of Blood Pressure
11. Recording of Body temperature, Pulse rate and Heart rate

12. Study of various systems and organs with the help of chart, models and specimen
    a) Cardiovascular system
    b) Respiratory system
    c) Digestive system

d) Urinary system
e) Endocrine system
f) Reproductive system
g) Nervous system
h) Eye
i) Ear
j) Skin

Recommended Books:

1. Human Physiology by C. C. Chatterjee
2. Human Anatomy and Physiology by S. Chaudhary and A. Chaudhary
3. Derasari and Gandhi's elements of Human Anatomy, Physiology and Health Education
4. S.R. Kale and R.R. Kale, Textbook of Practical Anatomy and Physiology

Reference Books:

1. Ross and Wilson Anatomy and Physiology in Health and illness
2. Human Anatomy and Physiology by Tortora Gerard J
3. Fundamentals of medical Physiology by K.Sambulingam and Prana Sambulingam
4. Ranade V.G. Text book of Practical Physiology
5. Goyal R.K., Natvar M.P. and Shah S.A., Practical Anatomy, Physiology and biochemistry, Experimental Physiology

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5. Social Pharmacy

Scope: This course is designed to impart basic knowledge on public health, safe use of medicines, smoking cessation, health promotion, immunisation, de-addiction, abuse and misuse of drugs.

Objectives: Upon completion of the course, the student shall be able to understand

- the disease preventive measures
- health promotion and education
- the social responsibility of the pharmacist in public health

Theory **75 Hours (3 Hrs/Week)**

Chapter	Topic	Hours
1	**Introduction to Social Pharmacy** • Definition and Scope. Social Pharmacy as a discipline and its scope in improving the public health. Role of Pharmacist in Public Health. • Concept of Health-WHO Definition, various dimensions, determinants, and health indicators. • National Health Policy	4
2	**Preventive care** • Demography and Family Planning. • Mother and child health, importance of breastfeeding, ill effects of weaning foods and bottle feeding • Vaccines and immunizations • Effect of Environment on Health– Water pollution, importance of safe drinking water, waterborne diseases, air pollution, noise pollution, sewage and solid waste disposal, occupational illnesses • Psychosocial Pharmacy: Drugs of misuse and abuse – psychotropics, narcotics, alcohol, tobacco and tobacco products. Social Impact of these habits on social health and productivity • Personal hygiene and sanitation in reproductive age group • Role of pharmacist in preventive care	16
3	**Nutrition and Health** • Basics of nutrition – Macronutrients and Micronutrients • Fibre diet– importance and sources (Plant and animal origin), • Calorific and nutritive values of various foods • Balanced diet, nutrition deficiency diseases, ill effects of junk foods • Genetically modified foods – Definition, advantages, disadvantages • Ill effects of artificial ripening, hybridization, use of pesticides, adulteration of foods. • Nutrition/dietary recommendation for diabetes, blood pressure, Hyperlipidemia, arthritis, renal disease, liver disease. • Artificial sweeteners, zero calorie concept, glycemic index of foods • Dietary supplements, nutraceuticals, food supplements, – indications, benefits, Drug -Food Interactions	10
4	**Health Promotion and Health education** Epidemiology of Communicable Diseases : Causative agents and Clinical presentations and Role of Pharmacist in educating the public in prevention of communicable diseases : • Respiratory infections – chickenpox, measles, rubella, mumps, influenza (including Avian-Flu, H1N1), diphtheria, whooping cough, meningococcal meningitis, acute respiratory infections, tuberculosis	**40**

	• Intestinal infections – poliomyelitis, viral hepatitis, cholera, acute diarrhoeal diseases, typhoid, food poisoning, amebiasis, worm infestations • Arthropod-borne infections - dengue, malaria, filariasis and, chikungunya • Surface infections – trachoma, tetanus, leprosy, STDs, HIV/AIDS	
5	Introduction to health systems and National health programs in India. Basics of disaster management.	5

Recommended Books

1. Social Pharmacy – Innovation and development edt. Geoff Harding, Sarah Nettleton and Kevin taylor. The Pharmaceutical Press.
2. Text Book of Community Pharmacy Practice. RPSGB Publication
3. Community Pharmacy Handbook- Jonathan Waterfield
4. S.Khurana, P Suresh and R Kalsi. Health Education & Community Pharmacy. S Vikas & Co
5. Social Pharmacy: Tayler,Geoffery. Pharmaceutical Press. London.

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1. Pharmacology

Scope: The subject provides basic knowledge of drugs with regard to definition, classification, pharmacokinetics and pharmacodynamics, uses, dose, route of administration, contraindications.

Objectives: Upon the completion of the course, the student shall be able to understand

- pharmacokinetics and pharmacodynamics of various drugs
- the clinical uses, dose, adverse effects indications and contraindications of various drugs

Theory **75 Hours (3 hrs/week)**

Chapter	Topic	Hours
1	**General Pharmacology** • Introduction and scope of Pharmacology • Various routes of drug administration- advantages and disadvantages • Drug absorption- definition, types, factors affecting drug absorption • Bio availability and the factors affecting the bioavailability • Drug distribution- definition, factors affecting drug distribution • Biotransformation of drugs- Definition, types of biotransformation reactions • Excretion of drugs- Definition, routes of drug elimination • General mechanisms of drug action and factors modifying drug action	8
2	**Drugs Acting on Peripheral Nervous System** • Steps involved in neurohumoral transmission • Definition, classification, pharmacological actions, dose, indications, and contraindications of a) Cholinergic drugs b) Anti-Cholinergic drugs c) Adrenergic drugs d) Adrenergic receptor blockers e) Neuromuscular blocking agents f) Drugs used in Myasthenia gravis g) Local anaesthetic agents h) Non Steroidal Anti-Inflammatory drugs (NSAIDs)	13
3	**Drugs Acting on Eye** Definition, classification, pharmacological actions, dose, indications and contraindications of Miotics, Mydriatics and Cycloplegics	2
4	**Drugs Acting on the Central Nervous System** Definition, classification, pharmacological actions, dose, indications and contraindications of • General anaesthetics • Hypnotics and sedatives • Anti-Convulsant drugs • Anti-anxiety drugs • Anti-depressant drugs • Centrally acting muscle relaxants • Narcotic analgesics	10
5	**Drugs Acting on Cardiovascular System** Definition, classification, pharmacological actions, dose, indications and contraindications of • Anti-hypertensive drugs • Anti-anginal drugs	6

	• Anti-arrhythmic drugs • Drugs used in atherosclerosis and congestive heart failure.	
6	**Drugs Acting on Blood and Blood Forming Organs** Definition, classification, pharmacological actions, dose, indications and contraindications of Haematinics, Anti-coagulants and Anti platelet drugs.	4
7	Definition, classification, pharmacological actions, dose, indications and contraindications of • Bronchodilators • Expectorants • Anti-tussives	2
8	**Drugs Acting on Gastro Intestinal Tract** Definition, classification, pharmacological actions, dose, indications and contraindications of • Anti-ulcer drugs • Anti-emetics • Laxatives and purgatives • Anti-diarrheal drugs	5
8	**Drugs Acting on Kidney** Definition, classification, pharmacological actions, dose, indications, and contraindications of • Diuretics • Anti-Diuretics	2
9	**Hormones and Hormone Antagonists** • Physiological and pathological role and clinical uses of thyroid hormones and anti-thyroid drugs, Parathormone, calcitonin and vitamin D • Insulin, Oral hypoglycemic agents • Estrogen and Progesterone • Oxytocin	8
10	**Autocoids** • Physiological role of Histamine, 5 HT and Prostaglandins. • Classification, clinical uses and adverse effects of antihistamines and 5 HT antagonists	3
11	**Chemotherapy** Classification, dose, indication and contraindications of drugs belonging to • Penicillins • Cephalosporins • Aminoglycosides • Fluoroquinolones • Anti-tubercular drugs • Anti-fungal drugs • Anti-viral drugs • Anti-cancer	12

Practicals **75 Hours (3 hrs/week)**

- Demonstration with recommended software and explanations only
- No use of animals for doing the Experiments

Minimum of 25 experiments to be conducted

1. Introduction to experimental pharmacology
2. Study of laboratory animals (a. Mice, b. Rats c. Guinea pigs, d. Rabbits)
3. Commonly used instruments in Experimental Pharmacology
4. Study of different routes of administration of drugs
5. Study of Local anaesthetics on rabbit eye and study of Mydriatic and Mitotic effect on rabbit eye
6. Demonstration of effect of analgesics using Analgesiometer
7. Principles involved in screening of anti-convulsant in mice or rats
8. Principles involved in screening of Muscle relaxants using Rota Rod apparatus
9. Principles involved in screening of CNS stimulants and depressants using actophotometer
10. Pyrogen testing by rabbit method
11. Study of effect of drugs on isolated heart
12. Effect of drugs on ciliary motility on frog's buccal cavity

Recommended Books

1. Satoskar, R.S. and Bhandarkar, S.D. Pharmacology and Pharmacotherapeutics
2. B. Suresh, A Text Book of Pharmacology
3. Derasari and Ghandhi, Elements of Pharmacology
4. S.K.Kulkarni ,Practical Pharmacology and Clinical Pharmacy
5. Ex- pharm 1.00 soft ware

Reference Books

6. H.K.Sharma. Principles of Pharmacology
7. Mary J.Mycek, Lippincott Williams and Wilkins. Lippincott's illustrated Reviews:Pharmacology
8. Tripathi, K.D. Essentials of Medical Pharmacology.

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2. Community Pharmacy and Management

Scope: The course is designed to impart basic knowledge and skills to provide various pharmaceutical care services to patients and general practitioners in the community setup.

Objectives: Upon completion of the course, the student shall be able to understand the procedure to set up and manage the community pharmacy

- to review and fill the prescriptions
- to counsel the patients about the disease and medications.

- to check Blood Pressure, capillary blood glucose and lung function

Theory **75 Hours (3 hrs/week)**

Chapter	Topic	Hours
1	**Community Pharmacy Practice** – Definition, history and development of community pharmacy- International and Indian scenario	2
2	Professional responsibilities of community pharmacist. Introduction to concept of Good Pharmacy Practice	3
3	**Prescription and prescription handling** • Definition, Parts of prescriptions, legality of prescriptions, Prescription handling, labelling of dispensed medications (Main label, Ancillary label, pictograms), brief instructions on medication usage. • Dispensing process, dispensing errors and strategies to minimize them	6
4	**Patient counselling** • Definition and Benefits of patient counselling, • Stages – counselling Introduction, counselling content, counselling process and counselling conclusion, • Barriers –Types and strategies to overcome the barriers • Counselling points for the selected chronic diseases (Hypertension, Diabetes, Asthma, Tuberculosis, Chronic obstructive pulmonary disease and AIDS) • PPIs – (Patient Package Insert) - Definition, Importance and benefits of PPIs. Scenario of PPI use in India and other countries. • Patient Information leaflets- Definition and uses	10
6	**Communication skills** • Definition, types of communication skills • Interactions with professionals and patients • Verbal communication skills (one-to-one, over the telephone) • Written communication skills • Body language, • Patient interview techniques	6
7	**Medication Adherence** Definition, factors influencing non adherence, strategies to overcome non adherence	2
8	**Health Screening services** • Introduction and usefulness of health screening services • Blood Pressure measurement • Recording of capillary blood glucose • Lung function assessment using peak flow meter • Calculation of Body mass index	5
9	**Over The Counter (OTC) medications** • Definition, need and role of Pharmacist in OTC medication dispensing. • OTC medications in India, counseling for OTC products. • Self medication and role of pharmacist in promoting safe self-medication	3
10	**Responding to symptoms/minor ailments** Etiopathogenesis, clinical presentations, non-pharmacological and	20

	pharmacological drug therapy of following minor ailments • Head ache, • GI disturbances (Nausea, Vomiting, Dyspepsia, diarrhea, constipation), • Worm infestations, • Pyrexia, • Ophthalmic disorders (Glaucoma and Conjuctivitis) • Upper Respiratory Tract infections, • Skin infections, • Oral and dental disorders.	
11	**Community Pharmacy Management** • Legal requirements to set up a community pharmacy • Site selection requirements, • Pharmacy designs and interiors • Vendor selection and ordering • Procurement, inventory control methods, and inventory management • Financial planning and management • Accountancy in community pharmacy – Day book, Cash book • Introduction to pharmacy operation softwares – usefulness and availability. a) Standard Operating Procedures (SOP) of Pharmacy management	18

Practicals **75 Hours (3 hrs/week)**

Minimum of 25 experiments to be conducted

1. Introduction to community pharmacy practice
2. Review of prescriptions for legality and completeness
3. Review of prescriptions for drug-drug interactions
4. Preparation of dispensing labels for medicines
5. Health Screening services – B.P recording, Capillary Blood Glucose check up, Lung function assessment through peak flow meter.
6. Counselling of patients for chronic diseases and medications
7. Counselling of patients in minor ailments
8. Visit to other community pharmacies and study of the activities and prepare a report

Recommended Books

1. Health Education and Community Pharmacy by N.S.Parmar.
2. WHO consultative group report.
3. Drug store & Business management by Mohammed Ali & Jyoti.
4. Handbook of pharmacy – health care. Edt. Robin J Harman. The Pharmaceutical Press
5. Comprehensive Pharmacy Review – Edt. Leon Shargel. Lippincott Williams & Wilkins.
6. Good Pharmacy Practices Training Manual by IPA/CDSCO/WHO India

7. Training Module for Community Pharmacists in TB Care and Control/ by MoH/IPA
8. Hand Book of PharmaSoS, Drugs in Special population- Pregnancy and Lactation, Tobacco free future- Choice is yours: KSPC Publications.

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3. Biochemistry & Clinical Pathology

- **Scope**: This course is designed to impart basic knowledge on the study of structure and functions of bio molecules and the chemical process associated with living cells in normal and abnormal state. The course is emphasize on the clinical pathology of blood and urine

Objectives: Upon completion of the course, the student shall be able to understand

- the structure and functions of biomolecules
- the catalytic activity, diagnostic and therapeutic importance of enzymes
- the metabolic pathways of biomolecules in health and illness (metabolic disorders)
- the biochemical principles of organ function tests and their clinical significance
- qualitative and quantitative determination of biomolecules/metabolites in the body fluids.
- the clinical pathology of blood and urine

Theory **75 Hours (3 Hrs/Week)**

Chapter	Topic	Hours
1	**Introduction to biochemistry**: Scope of biochemistry in pharmacy; Cell and its biochemical organization.	**2**
2	**Carbohydrates** • Definition, classification with examples • Monosaccharides-Structure of glucose, fructose and galactose • Disaccharides-Structure of maltose, lactose and sucrose • Polysaccharides-chemical nature of starch and glycogen • Qualitative tests and biological role carbohydrates	**5**
3	**Proteins** • Definition, classification of proteins based on composition and solubility with examples • Definition, classification of amino acids based on chemical nature and nutritional requirements with examples • Structure of proteins (four level of organization of protein structure) • Qualitative tests and biological role proteins and amino acids. • Diseases related to malnutrition of proteins.	**6**
4	**Lipids** • Definition, classification with examples • Structure and properties of triglycerides (oils and Fats) • Fatty acid classification-Based on chemical and nutritional requirements with examples • Structure and functions of cholesterol in the body • Lipoproteins- types, composition and functions in the body • Qualitative tests and functions of lipids	**5**
5	**Nucleic acids** • Definition, purine and pyrimidine bases • Components of nucleosides and nucleotides with examples • Structure of DNA (Watson & Crick model), RNA and their functions	**4**
6	**Enzymes** • Definition, properties and IUB & MB classification • Factors affecting enzyme activity • Enzyme inhibitors, • Therapeutic and pharmaceutical importance of enzymes	**5**
7	**Vitamins** • Definition and classification with examples • Sources, chemical nature, functions, coenzyme form, recommended dietary requirements, deficiency diseases of fat and water soluble vitamins	**6**
8	**Metabolism** (Study of cycle/pathways without chemical structures) • Metabolism of Carbohydrates: Glycolysis, TCA cycle and glycogen metabolism, regulation of blood glucose level. Diseases related to abnormal metabolism of Carbohydrates • Metabolism of lipids: Lipolysis, β-oxidation of Fatty acid (Palmitic acid) and its energetic, ketogenesis and ketolysis. Diseases related to	**20**

	abnormal metabolism of lipids such as ketoacidosis, Fatty liver, Hypercholesterolemia • Metabolism of Amino acids (Proteins): General reactions of amino acids and its significance–Transamination, deamination, Urea cycle and decarboxylation. Diseases related to abnormal metabolism of amino acids, Disorders of ammonia metabolism, phenylketonuria, alkaptonuria and Jaundice. • Biological oxidation: Electron transport chain and Oxidative phosphorylation	
9	**Minerals**: Functions, Deficiency diseases, recommended dietary requirements of calcium, phosphorus, iron, sodium and chloride	**05**
10	**Water and Electrolytes** • Distribution, functions of water in the body • Water turnover & balance. • Electrolyte composition of the body fluids, Dietary intake of electrolyte and Electrolyte balance. • Dehydration, causes of dehydration and oral dehydration therapy.	**05**
11	**Organ function tests** • Functions of kidney and routinely performed tests to assess the functions of kidney and their clinical significances. • Functions of liver and routinely performed test to assess the functions of liver and their clinical significances. • Lipid profile tests and its clinical significances	**06**
12	**Introduction to Pathology of Blood and Urine** • Lymphocytes and Platelets, their role in health and disease • Erythrocytes - Abnormal cells and their significance • Normal and Abnormal constituents of Urine and their significance	**06**

Practical **75 Hours (3 Hours/Week)**

1	Qualitative analysis of carbohydrates	4 experiments
2	Qualitative analysis of Proteins & amino acids	4 experiments
3	Qualitative analysis of lipids	2 experiments
4	Qualitative analysis of urine for normal and abnormal constituents	4 experiments
5	Determination of constituents of urine (glucose, creatinine, chlorides)	2 experiments
6	Determination of constituents of blood/serum (Creatine, glucose, cholesterol, Calcium, Urea, SGOT/SGPT)	5 experiments
7	Study the hydrolysis of starch from acid and salivary amylase enzyme	1 experiment

Recommended Books

1. Essentials of Biochemistry by U. Satyanarayan, Books and Allied (P) Ltd.
2. A Textbook of Biochemistry by A.V.S.S. Rama Rao, UBS Publishers' Distributors Pvt. Ltd.
3. Practical Biochemistry by R.C. Gupta and S. Bhargavan.
4. Laboratory manual of Biochemistry by Pattabiraman and Sitaram Acharya

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4. Pharmacotherapeutics

Scope: The course is designed to impart basic knowledge of etiopathogenesis, disease management and drug related problems.

Objectives: Upon completion of the course, the student shall be able to understand the clinical manifestations of various diseases

- drug therapy of various diseases
- medication counselling points

Theory **75 Hours (3 Hrs/Week)**

Chapter	Topic	Hours
I	Pharmacotherapeutics – Introduction, scope and objectives	1

II.	Definition, etiopathogenesis, clinical manifestations, non pharmacological and pharmacological management of the diseases associated with	
1	**Cardiovascular System** • Hypertension • Angina and Myocardial infarction • Hyperlipidemia • Congestive Heart Failure	10
2	**Respiratory System** • Asthma • COPD	4
3	**Endocrine System** • Diabetes. • Thyroid disorders- Hypo and Hyperthyroidism	4
4	**CNS** • Epilepsy, • Parkinson's disease, • Stroke • Migraine	8
5	**GI Disorders** • Gastro esophageal reflux disease • Acid Pepsin Disease, • Alcoholic liver disease • Inflammatory Bowel Diseases (Crohns disease and Ulcerative colitis).	8
6	**Hematological disorders** • Iron deficiency anemia, • Megaloblastic anemia	4
8	**Infectious diseases** • Tuberculosis • Pneumonia • Urinary tract infections, • Gonorrhoea and Syphilis • Malaria • HIV & Opportunistic infections	12
9	**Musculoskeletal disorders** • Rheumatoid arthritis, • Osteoarthritis	4
10	**Dermatology:** • Psoriasis, • Scabies, • Eczema • Impetigo	6
11	**Optholmology** • Conjunctivitis (bacterial and Viral)	4

	• Glaucoma	
12	**Women's Health** • Contraception – Chemical Methods, IUDs • Disorders related to Menstrual Cycle – Polycystic ovary Syndrome, Dysmenorrhea, Premenstrual Syndrome.	10

Recommended Books

1. Clinical Pharmacy and Therapeutics - Roger and Walker, Churchill Livingstone publication
2. Clinical Pharmacy and Therapeutics - Eric T. Herfindal, Williams and Wilkins Publication
3. Applied Therapeutics: The clinical Use of Drugs. Lloyd Young and Koda-Kimble MA]

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5. Hospital and Clinical Pharmacy

Scope: This course is designed to impart basic knowledge on drug procurement and distribution to out-patients and in- patients and clinical pharmacy services in the hospital.

Objectives: Upon completion of the course, the student shall be able to understand

- the responsibilities of hospital pharmacist and clinical pharmacist
- the drug distribution methods and inventory control techniques
- the biochemical parameters and their significance
- the adverse drug reaction monitoring and reporting

Theory **75 Hours (3 Hours/week)**

S.No.	Topic	Hours
1	**Hospital Pharmacy** • Definition, scope, national and international scenario • Organisational structure, • Professional responsibilities,	6

	• Qualification and experience requirements, job specifications, work load requirements and inter professional relationships, • Good Pharmacy Practice (GPP) in hospital.	
2	**Pharmacy and Therapeutic Committee** Objectives, Composition, functions of Pharmacy and Therapeutics committee. **Hospital Formulary** Definition, procedure for development and use of hospital formulary	**4**
3	**Supply chain & Inventory Control** • Procedures of Drug Purchases – Drug selection, short term, long term and tender process • Inventory control techniques: Economic Order Quantity, Reorder Quantity Level, Inventory Turnover etc • Inventory Management of Central Drug Store – Storage conditions, Distribution • Documentation- purchase and inventory	**9**
4	**Drug distribution** • Drug distribution – Definition, advantages and disadvantages of Individual prescription Order Method, Floor Stock Method, Unit Dose Drug Distribution Method, Drug Basket Method. • Distribution of drugs to ICCU/ICU/Emergency wards. • Automated drug dispensing systems and devices • Distribution of Narcotic and Psychotropic substances	**12**
5	**Radio Pharmaceuticals** Storage, dispensing and disposal of radiopharmaceuticals	**2**
6	**Clinical Pharmacy:** Definition, scope and development **Daily activities of clinical pharmacist:** Definition, goal and procedure of - • Ward round participation • Treatment Chart Review • Adverse drug reaction monitoring • Drug information and poisons information • Medication history • Patient counselling **Pharmaceutical care**: Definition, classification of drug related problems. Principles and procedure to provide pharmaceutical care	**12**
7	**Clinical laboratory tests used in the evaluation of disease states and interpretation of test results** • Hematological, Liver function, Renal function, thyroid function tests • Tests associated with cardiac disorders • Fluid and electrolyte balance • Pulmonary Function Tests	**10**
8	**Drugs and Poison information services** – Definition, Information resources with examples, and their advantages and disadvantages, Drug Information Centre services.	**4**
9	**Pharmacovigilance** • Definition, aim and scope • Overview of Pharmacovigilance	**2**
10	**Medication errors**: Definition, types, consequences, and strategies to minimize the medication errors **Drug Interactions:** Definition, types, clinical significance of drug	**4**

	interactions	
11	**Poisoning**: Types of poisoning: Clinical manifestations and antidotes	**2**
12	Application of computers in Hospital Pharmacy Practice, Soft ware used in hospital pharmacy	**2**
13	Medical and Surgical devices	**4**

Recommended Books

1. A text book of Clinical Pharmacy Practice; Essential concepts and skills, Dr.G.Parthasarathi et al, Orient Orient Langram Pvt.Ltd. ISSBN8125026.
2. Text Book of Hospital and Clinical Pharmacy by Dr. Pratibha Nand and Dr**.** Roop K Khar, Birla publications, New Delhi
3. Gupta B.K and Gupta R.N., GPP in Hospital Pharmacy, Vallabh Prakashan.
4. Gennaro et al., Ed. "Remington: The Science & Practice of Pharmacy," 20th ed., Lippincott Williams & Wilkins, 2000.
5. The Theory and Practice of Industrial Pharmacy. Leon Lachman, Herbert Lieberman, and Joseph Kanig, editors. Lea & Febiger, Philadelphia.
6. Chittion & Witcofski : "Nuclear Pharmacy," Lea & Febiger.Aiiwodd & Fell
7. Australian drug information - Procedure manual. The Society of Hospital Pharmacists of Australia.

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6. Pharmacy Law and Ethics

Scope: This course is designed to impart basic knowledge on several important legislations related to the profession of pharmacy in India.

Objectives: Upon completion of the course, the student shall be able to understand

- the Pharmaceutical legislations and their implications in the development and marketing
- various Indian pharmaceutical Acts and Laws
- the regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals
- the code of ethics during the pharmaceutical practice

Theory **75 hours (3 hrs/wk)**

Chapter	Topics	Hours
1	General Principals of Law, History and various Acts related to Drugs and Pharmacy profession	4
2	**Pharmacy Act-1948 & Rules:** Objectives, Definitions, Pharmacy Council of India; its constitution and functions, Education Regulations, State and Joint state	5

	pharmacy councils, Registration of Pharmacists, Offences and Penalties.	
3	**Drugs and Cosmetics Act 1940 and Rules 1945 & New Amendments** Objectives, Definitions, Legal definitions of schedules to the Act and Rules **Import of drugs** – Classes of drugs and cosmetics prohibited from import, Import under license or permit. **Manufacture of drugs** – Prohibition of manufacture and sale of certain drugs, Conditions for grant of license and conditions of license for manufacture of drugs, Manufacture of drugs for test, examination and analysis, manufacture of new drug, loan license and repacking license. Study of schedule C & C1, G, H, K, P, M, N, and X. ***Sale of Drugs*** – Wholesale, Retail sale and Restricted license. Drugs Prohibited for manufacture and sale in India ***Administration of the Act and Rules*** – Drugs Technical Advisory Board, Central Drugs Laboratory, Drugs Consultative Committee, Government analysts, Licensing authorities, controlling authorities, Drug Inspectors.	34
4	**Medicinal and Toilet Preparations Act 1955**: Objectives, Definitions, Licensing, Offences and Penalties	2
5	**Narcotic Drugs and psychotropic substance Act 1985 and Rules** Objectives, Definitions, Authorities and Officers, Prohibition, Control and Regulation, Offences and Penalties.	2
6	**Drugs and Magic remedies (Objectionable Advertisement) Act 1955** Objectives, Definitions, Prohibition of certain advertisements, Classes of Exempted advertisements, Offences and Penalties.	2
7	**Prevention of cruelty to Animals Act-1960**: Objectives, Definitions, Institutional Animal Ethics Committee, Breeding and Stocking of Animals, Performance of Experiments, Transfer and Acquisition of animals for experiment, Records, Power to suspend or revoke registration, Offences and Penalties.	2
8	**Poisons Act-1919** :Introduction, objective, definition, possession, possession for sales and sale of any poison, import of poisons	2
9	**Prevention of food adulteration Act, 1954 and Rules**: Objective, definition, central committee for food standards, FSSAI (Food Safety and Standards Authority of India), prohibition of import, prohibition of sale, and manufacture, offences and penalties	2
10	**National Pharmaceutical Pricing Authority**: Drugs Price Control Order (DPCO)-2013. Objectives, Definitions, Sale prices of bulk drugs, Retail price of formulations, Retail price and ceiling price of scheduled formulations, Pharmaceutical policy 2002, National List of Essential Medicines (NLEM)	5

11	**Code of Pharmaceutical Ethics**: Definition, ethical principles, ethical problem solving, registration, code of ethics for Pharmacist in relation to his job, trade, medical profession and his profession, Pharmacist's oath.	15

Recommended books

1. Forensic Pharmacy by B. Suresh
2. Text book of Forensic Pharmacy by B.M. Mithal
3. Hand book of drug law-by M.L. Mehra
4. A text book of Forensic Pharmacy by N.K. Jain
5. Drugs and Cosmetics Act/Rules by Govt. of India publications.
6. Medicinal and Toilet preparations act 1955 by Govt. of India publications.
7. Narcotic drugs and psychotropic substances act by Govt. of India publications
8. Drugs and Magic Remedies act by Govt. of India publications.

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