



Geethanjali

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## Geethanjali College of Pharmacy

Approved By AICTE, PCI New Delhi, Permanently Affiliated to JNTUH & Accredited by NBA (B. Pharmacy)

Recognized Under UGC Section 2F & 12B of UGC Act, 1956, by DSIR-SIRO & HI/BI of MSME Certified by ISO 9001:2015

Cheeryal (V), Keesara (M), Medchal-Malkajgiri District, Telangana State - 501 301.

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S. No.	List of Documents
1.	JNTUH, Hyderabad (Affiliating University) prescribed syllabus copies showing courses that include experimental learning through project work/field work/internship for the year 2016-17, 2017-18, 2018-19, 2019-20, and 2020-21.
2.	Minutes of the College Academic Committee meetings with approvals for courses that include experimental learning through project work/field work/internship for the year 2016-17, 2017-18, 2018-19, 2019-20, and 2020-21.

  
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Cheeryal(V), Keesara(M), Medchal, Dist. T.S. 501301.

Sponsored by : **TEJA EDUCATIONAL SOCIETY, HYDERABAD.**

Office : Sy. No. 33 & 34, Cheeryal (V), Keesara (M), Medchal-Malkajgiri (District), Telangana State - 501 301.

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2016  
B-Pharm

With effect from 02/08/2016

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. PHARMACY COURSE STRUCTURE (2016-17)

I YEAR I SEMESTER

S. No	Course Code	Subject	L	T	P	Credits
1	BS101/ BS102	Remedial Mathematics / Remedial Biology - I	4/ 2	1/ 1	0	4/ 2
2	PS103	Dispensing and General Pharmacy	4	1	0	4
3	PS104	Anatomy, Physiology and Health Education – I	3	1	0	3
4	BS105	Pharmaceutical Organic Chemistry – I	4	1	0	4
5	HS106	Professional Communication in English	3	0	0	3
6	PS107	Dispensing and General Pharmacy Lab –	0	0	3	2
7	PS108	Anatomy, Physiology and Health Education – I Lab	0	0	3	2
8	BS109	Pharmaceutical Organic Chemistry – I Lab	0	0	3	2
9	BS110	Remedial Biology - I Lab	0	0	3	2
10	*MC111	NSS	0	0	0	0
		<b>Total Credits</b>	18/16	4/4	12	24/24

I YEAR II SEMESTER

S. No	Course Code	Subject	L	T	P	Credits
1	BS201	Pharmaceutical Inorganic Chemistry	3	1	0	3
2	BS202	Pharmaceutical Organic Chemistry – II	4	1	0	4
3	PS203	Physical Pharmacy - I	4	1	0	4
4	BS204	Statistical Methods and Computer Applications	3	1	0	3
5	PS205	Anatomy, Physiology and Health Education – II	4	1	0	4
6	BS206	Pharmaceutical Inorganic Chemistry Lab –	0	0	3	2
7	BS207	Statistical Methods and Computer applications Lab	0	0	3	2
8	PS208	Physical Pharmacy – I Lab	0	0	3	2
9	*MC209	Physical Education	0	0	0	0
		<b>Total Credits</b>	18	5	9	24

Note: For Bi.P.C Students to choose Remedial Mathematics (Theory).

For M.P.C Students to choose Remedial Biology (Theory: 2-1-0-2, Lab: 0-0-3-2)

\*Mandatory Course



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**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD.**  
**B. PHARMACY**

**I YEAR**

Code	Subject	T	C	P	Code	C
R10001	Remedial Mathematics/ Remedial Biology	4+1/2+1	8/4	0/3	(R10051)	0/4
R10002	Dispensing and General Pharmacy	3+1	6	3	(R10052)	4
R10003	Pharm. Inorganic Chemistry	4+1	8	3	(R10053)	4
R10004	Pharmaceutical Organic Chemistry-I	3+1	6	3	(R10054)	4
R10005	Anatomy, Physiology and Health education	3+1	6	3	(R10055)	4
R10006	English	2	4	2	(R10056)	2
	<b>Total</b>	<b>24/22</b>	<b>38/34</b>	<b>14/17</b>		<b>18/22</b>

**II YEAR I SEMESTER**

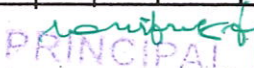
Code	Subject	T	C	P	Code	C
R30007	Pharmaceutical Unit Operations -I	4+1	4	-	-	-
R30008	Pharmaceutical Organic Chemistry - II	4+1	4	3	(R30057)	2
R30009	Statistical Methods & Computer Applications	4+1	4	3	(R30058)	2
R30010	Physical Pharmacy - I	4+1	4	3	(R30059)	2
R30011	Anatomy, Physiology & Pathophysiology	4+1	4	3	(R30060)	2
	<b>Total</b>	<b>25</b>	<b>20</b>	<b>12</b>		<b>8</b>

**II YEAR II SEMESTER**

Code	Subject	T	C	P	Code	C
R40012	Pharmaceutical Unit Operations- II	4+1	4	3	(R40061)	2
R40013	Pharmaceutical Biochemistry	4+1	4	3	(R40062)	2
R40014	Pharmacognosy - I	4+1	4	3	(R40063)	2
R40015	Physical Pharmacy - II	4+1	4	3	(R40064)	2
R40016	Environmental Studies	4+1	4	-	-	-
	<b>Total</b>	<b>25</b>	<b>20</b>	<b>12</b>		<b>8</b>

**III YEAR I SEMESTER**

Code	Subject	T	C	P	Code	C
R50017	Pharmaceutical Analysis I	4+1	4	3	(R50065)	2
R50018	Pharmaceutical Microbiology	4+1	4	3	(R50066)	2
R50019	Pharmacognosy - II	4+1	4	3	(R50067)	2
R50020	Pharmaceutical Technology - I	4+1	4	3	(R50068)	2
R50021	Pharmacology - I	4+1	4	-	-	-
	<b>Total</b>	<b>25</b>	<b>20</b>	<b>12</b>		<b>8</b>

  
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## III YEAR II SEMESTER

Code	Subject	T	C	P	Code	C
R60022	Medicinal Chemistry - I	3+1	3	3	(R6007J)	2
R60023	Pharmaceutical Technology-II	3+1	3	3	(R6007I)	2
R60024	Pharmacology II	4+1	4	3	(R60072)	2
R60025	Chemistry of Natural Products	4+1	4	3	(R60073)	2
R60026	Pharmaceutical Jurisprudence	4+1	4	-		-
R60069	Advanced Communication Skills Lab	-	-	3		2
	<b>Total</b>	<b>23</b>	<b>18</b>	<b>15</b>		<b>10</b>

## IV YEAR I SEMESTER

Code	Subject	T	C	P	Code	C
R70027	Pharmacognosy III	3+1	3	3	(R70075)	2
R70028	Biopharmaceutics and Pharmacokinetics	3+1	3	3	(R7007E)	2
R70029	Pharmacology III	4+1	4	3	(R70077)	2
R70030	Medicinal Chemistry II	4+1	4	3	(R7007E)	2
R70031	Pharmacy Administration	4+1	4	-		-
R70074	Seminar / Industrial Visit	-	-	-		2
	<b>Total</b>	<b>23</b>	<b>18</b>	<b>12</b>		<b>10</b>

## IV YEAR II SEMESTER

Code	Subject	T	C	P	Code	C
R80032	Novel Drug Delivery Systems and Regulatory Affairs	3+1	3	3	(R80080)	2
R80033	Pharmaceutical Biotechnology	4+1	4	3	(R80081)	2
R80034	Pharmaceutical Analysis - II	3+1	3	3	(R80082)	2
R80035	Human Values and Professional Ethics	4	4	-		-
R80036	Clinical Pharmacy Practice	4+1	4	-		-
R80079	Project work** & Comprehensive Viva	-	-	-		4
	<b>Total</b>	<b>22</b>	<b>18</b>	<b>9</b>		<b>10</b>

\*\* Suggested areas for project work.

1. Industrial Pharmacy
2. Clinical Pharmacy / Pharmacology
3. Pharmacognosy / Medical Chemistry
4. Pharmaceutical Analysis / Quality Assurance



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

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

New Delhi, 10<sup>th</sup> May, 2008.

### **Pharm.D. Regulations 2008**

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

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

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

#### **CHAPTER-I**

1. Short title and commencement. – (1) These regulations may be called the Pharm.D. Regulations 2008.  
(2) They shall come into force from the date of their publication in the official Gazette.
2. Pharm.D. shall consist of a certificate, having passed the course of study and examination as prescribed in these regulations, for the purpose of registration as a pharmacist to practice the profession under the Pharmacy Act, 1948.

  
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## CHAPTER-II

### 3. Duration of the course. –

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

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

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

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

Phase I – consisting of First and Second academic year.

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

### 4. Minimum qualification for admission to. –

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

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

Mathematics or Biology.

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

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

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

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

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

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

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

5. Number of admissions in the above said programmes shall be as prescribed by the Pharmacy Council of India from time to time and presently be restricted as below –
  - i) Pharm.D. Programme – 30 students.
  - ii) Pharm.D. (Post Baccalaureate) Programme – 10 students.
6. Institutions running B.Pharm programme approved under section 12 of the Pharmacy Act, will only be permitted to run Pharm.D. programme. Pharm.D. (Post Baccalaureate) programme will be permitted only in those institutions which are permitted to run Pharm.D. programme.
7. Course of study. – The course of study for Pharm.D. shall include the subjects as given in the Tables below. The number of hours in a week, devoted to each subject for its teaching in theory, practical and tutorial shall not be less than that noted against it in columns (3), (4) and (5) below.

### TABLES

#### First Year :

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

\* For Biology

  
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**Second Year:**

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

**Third Year:**

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

  
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**Fourth Year:**

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

**Fifth Year:**

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

\* Attending ward rounds on daily basis.

  
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**All the Examining Authorities conducting Pharm.D & Pharm.D  
(Post Bacallaureate) examinations**

**Sub: Inclusion of Pharmacotherapeutics I & II in IV<sup>th</sup> year for Pharm.D. (Post Bacallaureate) students.**


Sir

This has a reference to the subject cited above. In this connection, I am directed to state that the subject of Pharmacotherapeutics I & II be included in the course of study and examination of IV<sup>th</sup> year for Pharm.D. (Post Bacallaureate) students. A copy of the Pharmacotherapeutics syllabus I & II is enclosed herewith for your ready reference and also available on Council's website "www.pci.nic.in".

Yours faithfully

Sd/-

**(ARCHNA MUDGAL)**  
**Registrar-cum-Secretary**

  
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# **PHARM. D. POST BACCALAUREATE PROGRAM**

(Inclusion of Pharmacotherapeutics I & II subject in the fourth year of the program)

## **SYLLABUS FOR PHARMACOTHERAPEUTICS I & II (THEORY)**

Theory: 3Hrs/week

- Etiopathogenesis and pharmacotherapy of diseases associated with following systems/ diseases.

1.	<b>Cardiovascular system:</b> Hypertension, Congestive cardiac failure, Angina Pectoris, Myocardial infarction, Hyperlipidaemias, Electrophysiology of heart and Arrhythmias	<b>Total = 13 hrs</b> <b>(3+2+2+2+2+2)</b>
2.	<b>Respiratory system :</b> Introduction to Pulmonary function test, Asthma, Chronic obstructive airways disease, Drug induced pulmonary diseases	<b>Total = 6</b> <b>(1+2+2+1)</b>
3.	<b>Endocrine system :</b> Diabetes, Thyroid diseases, Oral contraceptives, Hormone replacement therapy, Osteoporosis	<b>Total = 8</b> <b>(3+2+1+1+1)</b>
4.	<b>General prescribing guidelines for</b> a. Paediatric patients b. Geriatric patients c. Pregnancy and breast feeding	<b>Total = 4 hrs</b> <b>(1+1+2)</b>
5.	<b>Ophthalmology:</b> Glaucoma, Conjunctivitis- viral & bacterial	<b>(3 hrs)</b>
6.	<b>Introduction to rational drug use</b> Definition, Role of pharmacist Essential drug concept Rational drug formulations	<b>Total = 2 hrs</b> <b>(1+1)</b>

  
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7.	<b>Infectious disease:</b> Guidelines for the rational use of antibiotics and surgical Prophylaxis, Tuberculosis, Meningitis, Respiratory tract infections, Gastroenteritis, Endocarditis, Septicemia, Urinary tract infections, Protozoal infection- Malaria, HIV & Opportunistic infections, Fungal infections, Viral infections, Gonorrhoea and Syphilis	<b>Total = 18 hrs.</b> (2+1+1+2+1+1+1+2+1+2+1+1+1+1)
8.	<b>Musculoskeletal disorders</b> Rheumatoid arthritis, Osteoarthritis, Gout, Spondylitis, Systemic lupus erythematosus.	<b>Total = 6hrs.</b> (2+1+1+1+1)
9.	<b>Renal system</b> Acute Renal Failure, Chronic Renal Failure, Renal Dialysis, Drug induced renal disorders	<b>Total = 05hrs.</b> (2+1+1+1)
10.	<b>Oncology:</b> Basic principles of Cancer therapy, General introduction to cancer chemotherapeutic agents, Chemotherapy of breast cancer, leukemia. Management of chemotherapy nausea and emesis	<b>Total = 06 hrs.</b> (2+1+2+1)
11.	<b>Dermatology:</b> Psoriasis, Scabies, Eczema, Impetigo	<b>Total = 4hrs.</b>

### PHARMACOTHERAPEUTICS – I & II (PRACTICAL)

**Practicals: 3 Hrs./Week**

**Practicals:**

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



the end of the course for evaluation. A minimum of 20 cases should be presented and recorded covering most common diseases.

### Assignments:

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

### Format of the assignment:


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

### Scheme of Practical Examination:

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

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

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**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**  
**M. Pharmacy (PHARMACEUTICS / PHARMACEUTICAL TECHNOLOGY)**

**COURSE STRUCTURE AND SYLLABUS**

**I Year – I Semester**

Category	Course Title	Int. marks	Ext. marks	L	P	C	
Core Course I	Applied Biopharmaceutics and Pharmacokinetics	25	75	4	--	4	
Core Course II	Advanced Physical Pharmaceutics	25	75	4	--	4	
Core Course III	Advanced Pharmaceutical Technology –I	25	75	4	--	4	
Core Elective I	1. Modern Pharmaceutical Analytical Technique 2. Intellectual Property Rights and Regulatory Affairs	25	75	4	--	4	
Open Elective I	1. Pharmacoepidemiology, Pharmacoeconomics and Pharmacovigilance 2. Drug Regulatory Affairs (National & International) 3. Herbal Cosmetic Technology 4. Separation Methods 5. Pharmaceutical Management – I	25	75	4	--	4	
Laboratory I	Modern Pharmaceutical Analytical Techniques Lab	25	75	4	--	4	
Laboratory II	Advanced physical Pharmaceutics Lab	25	75	--	4	2	
Seminar I	Seminar	50	--	--	4	2	
<b>Total Credits</b>					<b>24</b>	<b>8</b>	<b>28</b>

**I Year – II Semester**

Category	Course Title	Int. marks	Ext. marks	L	P	C	
Core Course IV	Advanced Drug Delivery Systems	25	75	4	--	4	
Core Course V	Industrial Pharmacy	25	75	4	--	4	
Core Course VI	Advanced Pharmaceutical Technology II	25	75	4	--	4	
Core Elective II	1. Biostatistics And Research Methodology 2. Screening Methods & Clinical Research	25	75	4	--	4	
Open Elective II	1. Stability of Drugs and Dosage Forms 2. Nano Based Drug Delivery Systems 3. Nutraceuticals 4. Pharmaceutical Management-II	25	75	4	--	4	
Laboratory III	Advanced Drug Delivery Systems Lab	25	75	4	--	4	
Laboratory IV	Advanced Pharmaceutical Technology Lab	25	75	--	4	2	
Seminar II	Seminar	50	--	--	4	2	
<b>Total Credits</b>					<b>24</b>	<b>8</b>	<b>28</b>

**II Year - I Semester**

Course Title	Int. marks	Ext. marks	L	P	C
Comprehensive Viva-Voce	--	100	--	--	4
Project work Review I	50	--	--	24	12
<b>Total Credits</b>				<b>24</b>	<b>16</b>

**II Year - II Semester**

Course Title	Int. marks	Ext. marks	L	P	C
Project work Review II	50	--	--	8	4
Project Evaluation (Viva-Voce)	--	150	--	16	12
<b>Total Credits</b>				<b>24</b>	<b>16</b>



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**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**  
**PHARMACEUTICAL ANALYSIS AND QUALITY ASSURANCE / QA**  
**COURSE STRUCTURE AND SYLLABUS**

**I Year – I Semester**

Category	Course Title	Int. marks	Ext. marks	L	P	C
Core Course I	Separation Techniques	25	75	4	--	4
Core Course II	Advanced Pharmaceutical Analysis – I	25	75	4	--	4
Core Course III	Quality Control of Bulk Drugs and Formulations	25	75	4	--	4
Core Elective I	1. Modern Pharmaceutical Analytical Technique 2. Intellectual Property Rights and Regulatory Affairs	25	75	4	--	4
Open Elective I	1. Pharmacoepidemiology, Pharmacoconomics and Pharmacovigilance 2. Drug Regulatory Affairs (National And International ) 3. Herbal Cosmetics Technology 4. Pharmaceutical Management – I 5. Advanced Physical Pharmaceutics	25	75	4	--	4
Laboratory I	Modern Pharmaceutical Analytical Techniques Lab	25	75	4	--	4
Laboratory II	Advanced Pharmaceutical Analysis-I Lab	25	75	--	4	2
Seminar I	Seminar	50	--	--	4	2
<b>Total Credits</b>				<b>24</b>	<b>8</b>	<b>28</b>

**I Year – II Semester**

Category	Course Title	Int. marks	Ext. marks	L	P	C
Core Course IV	Advanced Pharmaceutical Analysis – II	25	75	4	--	4
Core Course V	Spectral Analysis	25	75	4	--	4
Core Course VI	Quality Assurance	25	75	4	--	4
Core Elective II	1. Biostatistics And Research Methodology 2. Screening Methods & Clinical Research	25	75	4	--	4
Open Elective II	1. Stability of Drugs and Dosage Forms 2. Nano Based Drug Delivery Systems 3. Nutraceuticals 4. Pharmaceutical Product development and Management 5. Pharmaceutical Management-II	25	75	4	--	4
Laboratory III	Advanced Pharmaceutical Analysis – II Lab	25	75	4	--	4
Laboratory IV	Spectral Analysis Lab	25	75	--	4	2
Seminar II	Seminar	50	--	--	4	2
<b>Total Credits</b>				<b>24</b>	<b>8</b>	<b>28</b>

**II Year - I Semester**

Course Title	Int. marks	Ext. marks	L	P	C
Comprehensive Viva-Voce	--	100	--	--	4
Project work Review I	50	--	--	24	12
<b>Total Credits</b>			--	24	16

**II Year - II Semester**

Course Title	Int. marks	Ext. marks	L	P	C
Project work Review II	50	--	--	8	4
Project Evaluation (Viva-Voce)	--	150	--	16	12
<b>Total Credits</b>			--	24	16



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**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**  
**M. Pharmacy (PHARMACEUTICAL MANAGEMENT AND REGULATORY AFFAIRS)**  
**COURSE STRUCTURE AND SYLLABUS**



**I Year - I Semester**

Category	Course Title	Int. marks	Ext. marks	L	P	C
Core Course I	Pharmaceutical Management -I (General and Personnel)	25	75	4	--	4
Core Course II	Total Quality Management	25	75	4	--	4
Core Course III	Drug Regulatory Affairs (National and International Aspects)	25	75	4	--	4
Core Elective I	1. Modern Pharmaceutical Analytical Technique 2. Intellectual Property Rights and Regulatory Affairs	25	75	4	--	4
Open Elective I	1. Pharmacoepidemiology, Pharmacoeconomics and Pharmacovigilance 2. Herbal Cosmetics Technology 3. Advanced Pharmaceutical Technology -I 4. Industrial Pharmaceutics 5. Separation Techniques	25	75	4	--	4
Laboratory I	Modern Pharmaceutical Analytical Techniques Lab	25	75	4	--	4
Laboratory II	Pharmaceutical Management Lab	25	75	--	4	2
Seminar I	Seminar	50	--	--	4	2
<b>Total Credits</b>				<b>24</b>	<b>8</b>	<b>28</b>

**I Year - II Semester**

Category	Course Title	Int. marks	Ext. marks	L	P	C
Core Course IV	Pharmaceutical Management -II (Production, Marketing, Finance and Project)	25	75	4	--	4
Core Course V	Analytical Method Validation and Copyrights and Trademarks	25	75	4	--	4
Core Course VI	Pharmaceutical Market Research and Analysis	25	75	4	--	4
Core Elective II	1. Biostatistics And Research Methodology 2. Screening Methods & Clinical Research	25	75	4	--	4
Open Elective II	1. Stability of Drugs and Dosage Forms 2. Nano Based Drug Delivery Systems 3. Nutraceuticals 4. Advanced Drug Delivery Systems 5. Advanced Pharmaceutical Technology -II	25	75	4	--	4
Laboratory III	Analytical Method Validation Lab	25	75	4	--	4
Laboratory IV	Pharmaceutical Market Research and Analysis Lab	25	75	--	4	2
Seminar II	Seminar	50	--	--	4	2
<b>Total Credits</b>				<b>24</b>	<b>8</b>	<b>28</b>

**II Year - I Semester**

Course Title	Int. marks	Ext. marks	L	P	C
Comprehensive Viva-Voce	--	100	--	--	4
Project work Review I	50	--	--	24	12
<b>Total Credits</b>			<b>--</b>	<b>24</b>	<b>16</b>

**II Year - II Semester**

Course Title	Int. marks	Ext. marks	L	P	C
Project work Review II	50	--	--	8	4
Project Evaluation (Viva-Voce)	--	150	--	16	12
<b>Total Credits</b>			<b>--</b>	<b>24</b>	<b>16</b>

*Signature of*  
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**GEETHANJALI COLLEGE OF PHARMACY**

**Cheeryal (V), Keesara (M), R.R (D)**

Dt: 02/08/2016

**CIRCULAR**

**Subject:** College Academic Committee (CAC) meeting for the A.Y.2016-17- Reg.

The College Academic Committee (CAC) meeting is scheduled on 02/08/2016 at 3.00 P.M in Board room. All Board members are requested to attend the same.

**AGENDA POINTS**

- Consideration of the important communications, policy decisions received from the University, State Government, AICTE/PCI, etc., from time to time.
- To pass the annual budget of the College (including clearance of all University dues).
- To discuss about experiential learning courses in B.Pharmacy, Pharm D, Pharm D(PB) and M. Pharmacy programmes
- To monitor the students Performance and faculty development programs
- To approve the increase/reduction of intake, courses, new and closure.
- Approval of performance appraisal of faculty.
- To monitor and advice for Industry Institute Interactions.
- To monitor the steps taken for Students Training and Placement Activities.

  
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**GEETHANJALI COLLEGE OF PHARMACY**

**Cheeryal (V), Keesara (M), RR (D)**

Date: 02/08/2016

**College Academic Committee (CAC) minutes of meeting**

Ref: **GCPK/CAC/MOM/03**

Date and time of the meeting: 02/08/2016 at 3.00 P.M

The 2<sup>nd</sup> meeting of the College Academic Committee (CAC) of GCPK was held on 2<sup>nd</sup> Aug 2016 in Board Room, GCPK. The meeting was chaired by Dr. M. Ravi Kumar, Principal and Chair Person, CAC, GCPK. The list of members who attended the meeting was enclosed.

The meeting commenced with a word of welcome by Dr. M. Ravi Kumar, Principal and Chair Person. All the agendas were placed before the board to discuss and take action.

**1. Agenda: Curriculum Revision & Academic Regulation.**

**Resolution:**

The Chairperson reported that the references or opinions on the revised curriculum were received from Jawaharlal Nehru Technological University and the same is to be followed by the college. The chair person discussed about the academic calendars given by the university and college for all the years i.e. batch wise are to be implemented and followed accordingly.

**2. Agenda: Training and Placement cell**

**Resolution:**

The chair person suggested to conductance of guest lectures, workshops, seminars, industrial visits & educational tours for the students.

**3. Agenda: Discussion regarding the upcoming National Conference Dravyaka in the college.**

**Resolution:**

The chair person discussed about the topic to be introduced in the 8<sup>th</sup> National Conference "DRAVYAKA" which is proposed to be held in the 2<sup>nd</sup> week of March 2017.

  
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The chair person suggested the active participation of all the faculty members and students

**4. Agenda: Discussion about National Pharmacy Week held in November.**

**Resolution:**

The chair person discussed about 55<sup>th</sup> National Pharmacy Week to be held on 18.11.2016 to 24.11.2016. The chair person also proposed to organize Child Care Nutrition and Hygiene Awareness Camp at Zilla Parishad School, Cheeryal with the co-operation of the faculty and students.

**5. Agenda: Discussion about experiential learning courses in B.Pharmacy, Pharm D, Pharm D (PB) and M. Pharmacy programmes**

**Resolution:**

The chair person person discussed about experiential learning courses in B.Pharmacy, Pharm D, Pharm D (PB) and M. Pharmacy programmes with all members. The members approved and the list of courses are enclosed in Annexure A

**6. Agenda: Discussion regarding Awards for meritorious students:**

**Resolution:**

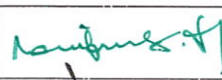
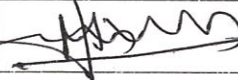
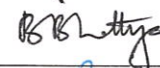


The chair person proposed to give prizes/appreciation certificates for the academic toppers. The chair person informed all the faculty members to encourage and motivate students to participate actively in academics/extracurricular activities.

  
CHAIRPERSON

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Members Present:

Date: 02/08/2016

S.No.	Name	Designation	Nature	Signature
1	Dr. M. Ravi Kumar	Professor & Principal	Coordinator	
2	Dr. M. Srinivas	HOD, Pharmaceutical Chemistry	Member Incharge	
3	Dr. B. Bhattacharya	HOD, Pharmacology	Member	
4	Dr. T. Mangilal	HOD, Pharmaceutics	Member	
5	K. Abbulu	HOD, Pharmacognosy	Member	ABSENT
6	Mr. Naga Kishore	Incharge, Exam branch	Member	
7	Mr. B. Rambabu	HOD, PharmD	Member	ABSENT



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**GEETHANJALI COLLEGE OF PHARMACY**  
**CHEERYAL (V), KEESARA (M) RR DIST, 501301**

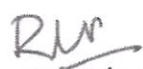
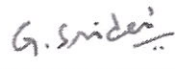
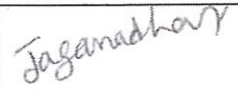
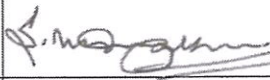
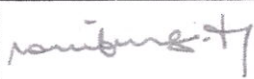

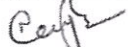
**Minutes of Meeting**

**Facilitator:** Dr. M. Ravikumar

**Date:** 19-08-2016

**Venue:** Principal's Office

**Time:** 2.00 PM

Governing Body Members	Particulars	Signature
Sri. G. R. Ravinder Reddy M.Tech., Secretary, Teja Educational Society	Chairman	
Dr. G. Sridevi M.D.S., Dentist	Society Nominated Members	
Ms. G. Madhumitha	Society Nominated Members	- ab -
Mrs. A. Manjula	Society Nominated Members	- ab -
Dr. K. S. Jaganadhan M.Pharm., PhD., PDF., Senior Scientist, Shantha Biotech	Industry Professional (Pharmacy)	
Dr. S. Uday Kumar M.Tech., PhD., Principal, GCET	Academician of Excellence	
Dr. M. Srinivas M.B.A., Ph.D., HOD, Dept of Finance, GCET.	Academician of Excellence	- ab -
Dr. M. Ajitha. PhD., Asso. Prof. in Pharmaceutical Sciences, IST, JNTUH	JNTUH Nominee	- ab -
Dr. M. Ravi Kumar M.Pharm., PhD., PDF., Principal, GCP	Member Secretary - Principal	
Dr. T. Mangilal, M.Pharm., PhD., Professor, GCP	Member	
Mrs. P. Neeraja, M. Pharm., Asst. Prof, GCP	Member	

The Principal of Geethanjali College of pharmacy convened the meeting by welcoming the members of the governing body. He briefed about the institution and handed out the sheets of agenda to the members.

The following matters were discussed in the meeting:

# GEETHANJALI COLLEGE OF PHARMACY

Approved by AICTE, PCI New Delhi, Permanently Affiliated to JNTUH  
Cheeryal (V), Keesara (M), Medchal-Malkajgiri Dist., Telangana State- 501301

## ANNEXURE-A

The following courses that include experiential learning through project work and field work (Industry Training) for B. Pharmacy (Program Code: Z51R; JNTUH Regulation: R13) are approved by the College Academic Committee for the Academic Year 2016-17.

S.No.	Year of Study	Name of the Course	Course Code
1	<b>I Year</b>	Dispensing and General Pharmacy	R1002
2		Pharm. Inorganic Chemistry	R1003
3		Pharmaceutical Organic Chemistry-I	R1004
4		Anatomy, Physiology and Health Education	R1005
5		Dispensing and General Pharmacy Lab	R10052
6		Pharm. Inorganic Chemistry Lab	R10053
7		Pharmaceutical Organic Chemistry-I Lab	R10054
8		Anatomy, Physiology and Health Education Lab	R10055
9	<b>II Year</b>	Pharmaceutical Unit Operations- I	R3007
10		Pharmaceutical Organic Chemistry - II	R3008
11		Statistical Methods and Computer Applications	R3009
12		Physical Pharmacy – I	R3010
13		Anatomy, Physiology and Pathophysiology	R3011
14		Pharmaceutical Organic Chemistry-II Lab	R30057
15		Statistical Methods and Computer Applications	R30058
16		Physical Pharmacy – I Lab	R30059
17		Anatomy, Physiology & Pathophysiology-Lab	R30060
18		Pharmaceutical Unit Operations -II	R40012
19		Pharmaceutical Biochemistry	R40013
20		Pharmacognosy-I	R40014
21		Physical Pharmacy-II	R40015
22		Pharmaceutical Unit Operations- II Lab	R40061
23		Pharmaceutical Biochemistry Lab	R40062
24		Pharmacognosy-I Lab	R40063
25		Physical Pharmacy-II Lab	R40064
26	<b>III Year</b>	Pharmaceutical Analysis-I	R50017
27		Pharmaceutical Microbiology	R50018
28		Pharmacognosy-II	R50019
29		Pharmaceutical Technology-I	R50020

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30		Pharmacology-I	R50021
31		Pharmaceutical Analysis-I Lab	R50065
32		Pharmaceutical Microbiology Lab	R50066
33		pharmacognosy- II lab	R50067
34		Pharmaceutical Technology-I Lab	R50068
35		Medicinal Chemistry-I	R60022
36		Pharmaceutical Technology-II	R60023
37		Pharmacology-II	R60024
38		Chemistry of Natural Products	R60025
39		Medicinal Chemistry-I Lab	R60070
40		Pharmaceutical Technology-II Lab	R60071
41		Pharmacology-II Lab	R60072
42		Chemistry of Natural Products Lab	R60073
43	<b>IV Year</b>	Pharmacognosy-III	R70027
44		Biopharmaceutics & Pharmacokinetics	R70028
45		Pharmacology-III	R70029
46		Medicinal Chemistry-II	R70030
47		Seminar/Industrial Visit	R70074
48		Pharmacognosy-III Lab	R70075
49		Biopharmaceutics & Pharmacokinetics Lab	R70076
50		Pharmacology-III Lab	R70077
51		Medicinal Chemistry-II Lab	R70078
52		Novel Drug Delivery Systems & Regulatory Affairs	R80032
53		Pharmaceutical Biotechnology	R80033
54		Pharmaceutical Analysis – II	R80034
55		Clinical Pharmacy Practice	R80036
56		Project Work & Comprehensive Viva	R80079
57		Novel Drug Delivery Systems & Regulatory Affairs Lab	R80080
58		Pharmaceutical Biotechnology Lab	R80081
59		Pharmaceutical Analysis – II Lab	R80082

  
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The following courses that include experiential learning through internship for Pharm. D (PB) (Program Code: Z55T; JNTUH Regulation: R08) are approved by the College Academic Committee for the Academic Year 2016-17.

S.No.	Year of Study	Name of the Course	Course Code
1	I Year	Pharmacotherapeutics-III	PD.C41
2		Hospital Pharmacy	PD.C42
3		Clinical Pharmacy	PD.C43
4		Biostatistics & Research Methodology	PD.C44
5		Biopharmaceutics & Pharmacokinetics	PD.C45
6		Clinical Toxicology	PD.C46
7		Pharmacotherapeutics-III Lab	PD.C47
8		Hospital Pharmacy Lab	PD.C48
9		Clinical Pharmacy Lab	PD.C49
10		Biopharmaceutics & Pharmacokinetics Lab	PD.C410
11		Pharmacotherapeutics I&II	PD.C411
12		Pharmacotherapeutics I&II LAB	PD.C412
13	II Year	Clinical Research	PD.C51
14		Pharmacoepidemiology & Pharmacoeconomics	PD.C52
15		Clinical Pharmacokinetics & Pharmacotherapeutic Drug Monitoring	PD.C53
16		Clerkship	PD.C54
17		Project Work	PD.C55
18	III Year	Internship	PD.C61

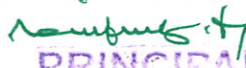
  
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The following courses that include experiential learning through Project work for M. Pharm-Pharmaceutics (Program Code: Z51S03; JNTUH Regulation: R15) are approved by the College Academic Committee for the Academic Year 2016-17.

S.No.	Year of Study	Name of the Course	Course Code
1	I Year	Applied Bio Pharmaceutics and Pharmacokinetics	MPT.C1 11
2		Advanced Physical Pharmaceutics	MPT.C1 12
3		Advanced Pharmaceutical Technology-I	MPT.C1 13
4		Modern Pharmaceutical Analytical Technique	MPT.C1 14
5		Intellectual Property Rights and Regulatory Affairs	MPT.C1 15
6		Pharmacoepidemiology, Pharmacoeconomics And Pharmacovigilance	MPT.C1 16
7		Drug Regulatory Affairs (National & International)	MPT.C1 17
8		3. Herbal Cosmetic Technology	MPT.C1 18
9		4. Separation Methods	MPT.C1 19
10		5. Pharmaceutical Management – I	MPT.C1 20
11		Modern Pharmaceutical Analytical Techniques	MPT.C1 21
12		Advanced Physical Pharmaceutics Lab	MPT.C1 22
13		Seminar	MPT.C1 23
14		Advanced Drug Delivery System	MPT.C1 21
15		Industrial Pharmacy	MPT.C1 22
16		Advanced Pharmaceutical Technology II	MPT.C1 23
17		Biostatistics and Research Methodology	MPT.C1 24
18		Screening Methods & Clinical Research	MPT.C1 25
19		Stability of Drugs and Dosage Forms	MPT.C1 26
20		Nano Based Drug Delivery Systems	MPT.C1 27

  
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21		Nutraceuticals	MPT.C1 28
22		Pharmaceutical Management-II	MPT.C1 29
23		Advanced Drug Delivery Systems Lab	MPT.C1 30
24		Advanced Pharmaceutical Technology Lab	MPT.C1 31
25		Seminar	MPT.C1 32
26	<b>II Year</b>	Comprehensive Viva-Voce	MPT.C2 11
27		Project Work Review I	MPT.C2 12
28		Project Work Review II	MPT.C2 21
29		Project Evaluation (Viva-voce)	MPT.C2 22

*Signature*  
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The following courses that include experiential learning through Project work for M. Pharm-Pharmaceutical Regulatory Affairs (Program Code: Z51S13; JNTUH Regulation: R15) are approved by the College Academic Committee for the Academic Year 2016-17.

S.No.	Year of Study	Name of the Course	Course Code
1	<b>I Year</b>	Pharmaceutical Management –I (General and Personnel)	M.P111
2		Total Quality Management	M.P112
3		Drug Regulator Affairs (National and International Aspects)	M.P113
4		Modern Pharmaceutical Analytical Technique	M.P114
5		Intellectual Property Rights and Regulatory Affairs	M.P115
6		Pharmacoepidemiology, Pharmacoeconomics And Pharmacovigilance	M.P116
7		Herbal Cosmetics Technology	M.P117
8		Advanced Pharmaceutical Technology –	M.P118
9		Industrial Pharmaceutics	M.P119
10		Separation Techniques	M.P120
11		Modern Pharmaceutical Analytical Techniques Lab	M.P121
12		Pharmaceutical Management Lab	M.P122
13		Seminar	M.P123
14		Pharmaceutical Management –II (Production, Marketing, Finance and Project)	M.P121
15		Analytical Method Validation and Copyrights and Trademarks	M.P122
16		Pharmaceutical Market Research and Analysis	M.P123
17		Biostatistics and Research Methodology	M.P124
18		Screening Methods & Clinical Research	M.P125
19		Stability of Drugs and Dosage Forms	M.P127
20		Nano Based Drug Delivery Systems	M.P128

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21		Nutraceuticals	M.P1 29
22		Advanced Drug Delivery Systems	M.P1 30
23		Advanced Pharmaceutical Technology -II	M.P1 31
24		Analytical Method Validation Lab	M.P1 32
25		Pharmaceutical Market Research and Analysis Lab	M.P1 33
26		Seminar	M.P1 34
27	<b>II Year</b>	Comprehensive Viva-Voce	M.P2 11
28		Project Work Review I	M.P2 12
29		Project Work Review II	M.P2 21
30		Project Evaluation (Viva-Voce)	M.P2 22

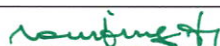
*Sanjiv H*  
PRINCIPAL

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Kopparahally, Keppara, Medchal Dist. T.S.-501301.



The following courses that include experiential learning through Project work for M. Pharm-Pharmaceutical Analysis (Program Code: Z51S12; JNTUH Regulation: R15) are approved by the College Academic Committee for the Academic Year 2016-17.

S.No.	Year of Study	Name of the Course	Course Code
1	I Year	Separation Techniques	MPA.C1 11
2		Advanced Instrumental Analysis	MPA.C1 12
3		Quality Control of Bulk Drugs and Formulations	MPA.C1 13
4		Modern Pharmaceutical Analytical Techniques	MPA.C1 14
5		Intellectual Property Rights and Regulatory Affairs	MPA.C1 15
6		Pharmacoepidimology,Pharmacoeconomics And Pharmacovigilance	MPA.C1 16
7		Drug Regulatory Affairs	MPA.C1 17
8		Herbal Cosmetics Technology	MPA.C1 18
9		Pharmaceutical Management-1	MPA.C1 19
10		Advanced Physical Pharmaceutics	MPA.C1 20
11		Modern Pharmaceutical Analytical Techniques Lab	MPA.C1 21
12		Advanced Instrumental Analysis Lab	MPA.C1 22
13		Seminar I	MPA.C1 23
14		Advanced Pharmaceutical Analysis -Ii	MPA.C1 21
15		Spectral Analysis	MPA.C1 22
16		Quality Assurance	MPA.C1 23
17		Biostatistics and Research Methodology	MPA.C1 24
18		Screening Methods and Clinical Reasearch	MPA.C1 25
19		Stability of Drug Dosage Forms	MPA.C1 26
20		Nano Based Drug Delivery System	MPA.C1 27

  
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21		Nutraceuticals	MPA.C1 28
22		Pharmaceutical Product Development and Management	MPA.C1 29
23		Pharmaceutical Management-II	MPA.C1 30
24		Advanced Pharmaceutical Analysis -Ii Lab	MPA.C1 34
25		Spectral Analysis Lab	MPA.C1 31
26		Seminar II	MPA.C13 2
27	<b>II Year</b>	Comprehensive Viva-Voce	M.P211
28		Project Work Review I	M.P212
29		Project Work Review II	M.P221
30		Project Evaluation (Viva-Voce)	M.P222

  
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