



महाराष्ट्र राज्य तंत्र शिक्षण मंडळ.

(स्वायत्त) (ISO: ९००१:२०१५)

(ISO/IES: २७००१-२०१३)

शासकीय तंत्रनिकेतन इमारत, चौथा मजला, ४९, खेरवाडी, बांद्रा (पूर्व), मुंबई - ४०० ०५१.

दूरध्वनी क्र.: ०२२-६२५४२१५१/१५२

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जा.क्र.मरातेशिमं/का-५०/फार्मसी/२०२१/ 8391

दिनांक: 17 DEC 2021

परिपत्रक

प्रति,

प्राचार्य,

औषधनिर्माणशास्त्र हा पदविका अभ्यासक्रम
राबविणा-या मंडळाशी संलग्नीत सर्व संस्था.

विषय: औषधनिर्माणशास्त्र या पदविका अभ्यासक्रमाच्या नविन सुधारित पाठ्यक्रमाबाबत.

संदर्भ: १. भारतीय राजपत्र क्र. CG-DL-E-17102020-222534 dt. 16.10.2020

२. Pharmacy Council of India यांचे दि.२३.०९.२०२१ रोजीचे पत्र क्र. १४-५५/२०२१-
PCI(A) / ३६४२-४५

३. मंडळाचे परिपत्रक क्र. मरातेशिमं/का-५०/अभ्यासक्रम/२०२१/६४२५ दि. ३०.०९.२०२१

उपरोक्त संदर्भ क्र. १ अन्वये भारताचे राजपत्र (Gazette of India) नुसार Education Regulation २०२० for Diploma Courses in Pharmacy दि. ०९.१०.२०२० रोजी प्रसिद्ध करण्यात आले होते. तदनंतर सदर राजपत्राच्या अंमलबजावणीकरिता Pharmacy Council of India द्वारे दि. २३.०९.२०२१ रोजी संदर्भ क्र. २ नुसार कळविण्यात आले होते.

त्यानुसार औषधनिर्माणशास्त्र या पदविका अभ्यासक्रमाकरिता सुधारित पाठ्यक्रम Pharmacy Council of India च्या ER-२०२० प्रमाणे शैक्षणिक वर्ष २०२१-२२ पासून प्रथम वर्षाकरिता लागू करण्यात आला आहे. तदनंतर द्वितीय वर्षाकरिता नविन पाठ्यक्रम शैक्षणिक वर्ष २०२२-२३ पासून लागू करण्यात येईल. संदर्भ क्र. ३ अन्वये मंडळाने महत्वाचे परिपत्रक प्रसिद्ध करून सदर नविन अभ्यासक्रमाच्या पाठ्यक्रमाची अंमलबजावणी संस्था स्तरावर करण्याचे निर्देश दिलेले आहेत.

उपरोक्त विषयाच्या अनुषंगाने कळविण्यात येते की, मंडळाने सदर अभ्यासक्रमाची परीक्षा घेण्याकरिता Teaching & Examination Scheme तयार केलेली असून ही 'J' स्कीम म्हणून राबविण्यात येईल. औषधनिर्माणशास्त्र या पदविका अभ्यासक्रमाची 'J' स्कीम अंतर्गत Teaching & Examination Scheme व Pharmacy Council of India द्वारे प्रसिद्ध करण्यात आलेला पाठ्यक्रम मंडळाच्या संकेत स्थळावर प्रसिद्ध करण्यात आलेला आहे, याची नोंद घ्यावी. सदर बाब विद्यार्थी व संबंधित अध्यापक यांच्या निदर्शनास आणून देण्याची जबाबदारी संस्थाप्रमुखांची राहिल.

(डॉ. महेंद्र रा. चितलांगे)

सचिव

म. रा. तंत्र शिक्षण मंडळ, मुंबई.

प्रत:

१. मा. संचालक, म. रा. तंत्र शिक्षण मंडळ, मुंबई यांना माहितीसाठी.

२. उपसचिव, म. रा. तंत्र शिक्षण मंडळ, विभागीय कार्यालय, मुंबई, पुणे, नागपूर व औरंगाबाद यांना माहितीसाठी.

३. उपसचिव, (निकाल / प्रश्न पत्रिका विभाग), म. रा. तंत्र शिक्षण मंडळ, मुंबई यांना आवश्यक कार्यावलीकरीता



**MAHARASHTRA STATE BOARD OF TECHNICAL EDUCATION, MUMBAI
TEACHING AND EXAMINATION SCHEME FOR POST H.S.C. DIPLOMA COURSES.**

COURSE NAME: DIPLOMA IN PHARMACY

COURSE CODE : PH

DURATION OF COURSE: 2 YEARS

YEAR : FIRST

PATTERN : FULL TIME - YEARLY

WITH EFFECT FROM 2021-22

DURATION : 32 WEEKS

SCHEME : J

S. N.	Course Title	Course Abbreviation	Course Code	Teaching Scheme		Examination Scheme												Grand Total
				L	T	P	Theory			PR			PM			Total		
							TH	TM	Total	Max Marks	Min Marks	Max Marks	Min Marks	Max Marks	Min Marks			
																	Max Marks	
1	PHARMACEUTICS- Theory	PHT	20111	3	1	--	3	80	00	20*	00	40	--	--	--	--	100	
2	PHARMACEUTICS- Practical	PHP	20051	--	--	3	--	--	--	--	80#	00	20*	00	100	40	100	
3	PHARMACEUTICAL CHEMISTRY- Theory	PCT	20112	3	1	--	3	80	00	20*	00	40	--	--	--	--	100	
4	PHARMACEUTICAL CHEMISTRY- Practical	PCP	20052	--	--	3	--	--	--	--	80#	00	20*	00	100	40	100	
5	PHARMACOGNOSY- Theory	PYT	20113	3	1	--	3	80	00	20*	00	40	--	--	--	--	100	
6	PHARMACOGNOSY- Practical	PYP	20053	--	--	3	--	--	--	--	80#	00	20*	00	100	40	100	
7	HUMAN ANATOMY & PHYSIOLOGY- Theory	HPT	20114	3	1	--	3	80	00	20*	00	40	--	--	--	--	100	
8	HUMAN ANATOMY & PHYSIOLOGY- Practical	HPP	20054	--	--	3	--	--	--	--	80#	00	20*	00	100	40	100	
9	SOCIAL PHARMACY- Theory	SPT	20115	3	1	--	3	80	00	20*	00	40	--	--	--	--	100	
10	SOCIAL PHARMACY- Practical	SPP	20055	--	--	3	--	--	--	--	80#	00	20*	00	100	40	100	
Total				15	5	15	400	400	100	500	400	400	100	500	500	500	1000	

Student Contact Hours Per Week: **35 Hrs.**

Theory and practical periods of 60 minutes each.

Abbreviations: TH-Theory, PR-Practical, TM- Theory Sessional PM- Practical Sessional, L - Lectures, T - Tutorial, P - Practical

External Assessment

* Internal Assessment refer guidelines for theory and practical sessional examination given in "Syllabus framed under Regulation 7 equipments and apparatus under Appendix-A of The Education Regulations, 2020 For Diploma Course in Pharmacy"

➤ **Candidate shall be declared as "Detained" in case of not fulfilling the condition in regulation 10 of Education Regulations, 2020 for**

Diploma Course in Pharmacy and / or obtaining Zero marks in the "PM" part of practical of any course.



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**MAHARASHTRA STATE BOARD OF TECHNICAL EDUCATION, MUMBAI
TEACHING AND EXAMINATION SCHEME FOR POST H.S.C. DIPLOMA COURSES.**

COURSE NAME: DIPLOMA IN PHARMACY

COURSE CODE : PH

DURATION OF COURSE: 2 YEARS

YEAR : SECOND

PATTERN : FULL TIME - YEARLY

WITH EFFECT FROM 2021-22

DURATION : 32 WEEKS

SCHEME : J

S. N.	Course Title	Course Abbreviation	Course Code	Teaching Scheme		Examination Scheme												Grand Total	
				L	T	P	Theory						Practical						
							TH		TM		Total		PR		PM		Total		
							Max Marks	Min Marks	Max Marks	Min Marks	Max Marks	Min Marks	Max Marks	Min Marks	Max Marks	Min Marks	Max Marks		
1	PHARMACOLOGY- Theory	PGT	20221	3	1	--	3	80	00	20*	00	100	40	--	--	--	--	100	
2	PHARMACOLOGY- Practical	PGP	20056	--	--	2	--	--	--	--	--	--	80#	00	20*	00	100	40	100
3	COMMUNITY PHARMACY & MANAGEMENT- Theory	CMT	20222	3	1	--	3	80	00	20*	00	100	40	--	--	--	--	100	
4	COMMUNITY PHARMACY & MANAGEMENT- Practical	CMP	20057	--	--	3	--	--	--	--	--	--	80#	00	20*	00	100	40	100
7	BIOCHEMISTRY & CLINICAL PATHOLOGY - Theory	BCT	20223	3	1	--	3	80	00	20*	00	100	40	--	--	--	--	100	
8	BIOCHEMISTRY & CLINICAL PATHOLOGY- Practical	BCP	20058	--	--	2	--	--	--	--	--	--	80#	00	20*	00	100	40	100
5	PHARMACOTHERAPEUTICS- Theory	PTT	20224	3	1	--	3	80	00	20*	00	100	40	--	--	--	--	100	
6	PHARMACOTHERAPEUTICS- Practical	PTP	20059	--	--	1	--	--	--	--	--	--	80#	00	20*	00	100	40	100
9	HOSPITAL & CLINICAL PHARMACY- Theory	HCT	20225	3	1	--	3	80	00	20*	00	100	40	--	--	--	--	100	
10	HOSPITAL & CLINICAL PHARMACY- Practical	HCP	20060	--	--	1	--	--	--	--	--	--	80#	00	20*	00	100	40	100
11	PHARMACY LAW & ETHICS- Theory	PLT	20226	3	1	--	3	80	00	20*	00	100	40	--	--	--	--	100	
Total				18	6	9		480	--	120	--	600	--	400	100	--	500	--	1100

Student Contact Hours Per Week: **33 Hrs.**

Theory and practical periods of 60 minutes each.

Medium of Instruction: **English**

Total Marks : **1100**

Abbreviations: TH-Theory, PR-Practical, TM- Theory Sessional PM- Practical Sessional, L - Lectures, T - Tutorial, P - Practical

External Assessment, * Internal Assessment refer guidelines for theory and practical sessional examination given in "Syllabus frame under Regulation 7, List of prescribed equipments and apparatus under Appendix-A of The Education Regulations, 2020 For Diploma Course in Pharmacy, 2020 for

> **Candidate shall be declared as "Detained" in case of not fulfilling the condition in regulation 10 of Education Regulations, 2020 for**

Diploma Course in Pharmacy and / or obtaining Zero marks in the "PM" part of practical of any course.



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Scheme - J
Specification Table

Program Name : Diploma in Pharmacy
Program Code : PH
Year : First
Course Title : Pharmaceutics – Theory (PHT)
Course Code : 20111

Unit No	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
1	History of profession of pharmacy in India	7	3	5	0	8
2	Packaging materials	5	2	3	0	5
3	Pharmaceutical aids	3	3	0	0	3
4	Unit operations	9	4	5	3	12
5	Tablets	8	2	5	3	10
	Capsules	4	0	5	0	5
	Liquid oral preparations	6	1	5	0	6
	Topical preparations	8	2	3	3	8
	Nasal and ear preparations	2	2	0	0	2
	Powders and granules	3	0	3	0	3
	Sterile formulations	6	0	5	3	8
	Immunological products	4	1	5	0	6
6	Basic structure, layout, sections and activities of pharmaceutical manufacturing plants, quality control and quality assurance	5	0	3	3	6
7	Novel drug delivery systems	5	0	3	3	6
Total		75	20	50	18	88

Scheme - J
Specification Table

Program Name : Diploma in Pharmacy
Program Code : PH
Year : First
Course Title : Pharmaceutical Chemistry – Theory (PCT)
Course Code : 20112

Sr. No.	Unit title	Teaching hours	Distribution of Marks			Total Marks
			R level	U level	A level	
1	Introduction to Pharmaceutical Chemistry, Sources and Types of errors and Impurities in Pharmaceuticals	8	1	3	5	09
2	Volumetric and Gravimetric analysis	8	1	3	5	09
3	Inorganic Pharmaceuticals	7	2	0	5	07
4	Introduction to nomenclature of organic chemical systems including heterocyclic compounds	2	4	0	0	4
5	Drugs acting on Central Nervous System	9	2	3	5	10
6	Drugs acting on Autonomic Nervous System	9	2	3	5	10
7	Drugs acting on Cardiovascular System	5	2	3	0	05
8	Diuretics	2	1	3	0	4
9	Hypoglycaemic agents	3	0	3	0	3
10	Analgesics and anti-inflammatory agents including Narcotic analgesics and NSAIDs	3	2	3	0	5
11	Anti-infective agents	8	01	3	5	09
12	Antibiotics	8	1	3	5	09
13	Anti-neoplastic agents	3	1	3	0	4
	Total	75	20	33	35	88

Scheme - J
Specification Table

Program Name : Diploma in Pharmacy
Program Code : PH
Year : First
Course Title : Pharmacognosy – Theory (PYT)
Course Code : 20113

Unit No	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
1	Definition, History, Present status and Scope of Pharmacognosy	2	0	3	0	3
2	Classification of Drugs	4	0	5	0	5
3	Quality control of crude drugs	6	2	3	3	8
4	Brief outline of occurrence, distribution, isolation, identification tests, therapeutic activity and pharmaceutical applications of alkaloids, terpenoids, glycosides, volatile oils, tannins and resins.	6	3	3	0	6
5	Biological source, chemical constituents and therapeutic efficacy of crude drugs: Laxatives Aloe, Castor oil, Ispaghula, Senna Cardiotonic Digitalis, Arjuna Carminatives and G.I. regulators Coriander, Fennel, Cardamom, Ginger, Clove, Black Pepper, Asafoetida, Nutmeg, Cinnamon Astringents Myrobalan, Black Catechu, Pale Catechu Drugs acting on nervous system Hyoscyamus, Belladonna, Ephedra, Opium, Tea leaves, Coffee seeds, Coca Anti-hypertensive Rauwolfia Anti-tussive Vasaka, Tolu Balsam Anti-rheumatics Colchicum seed Anti-tumour Vinca, Podophyllum Antidiabetics Pterocarpus, Gymnema Diuretics Gokhru, Punarnava Anti-dysenteric Ipecacuanha Antiseptics and disinfectants Benzoin, Myrrh, Neem, Turmeric Antimalarials Cinchona, Artemisia Oxytocic Ergot Vitamins Cod liver oil, Shark liver oil Enzymes: Papaya, Diastase, Pancreatin, Yeast	30	12	18	0	30

	Pharmaceutical Aids :Kaolin, Lanolin, Beeswax, Acacia, Tragacanth, Sodium alginate, Agar, Guar gum, Gelatine Miscellaneous: Squill, Galls, Ashwagandha, Tulsi, Guggul					
6	Plant fibres used as surgical dressings	3	1	3	0	4
7	*Basic principles involved in the traditional systems of medicine like: Ayurveda, Siddha, Unani and Homeopathy *Method of preparation of Ayurvedic formulations like: Arista, Asava, Gutika, Taila, Churna, Lehya and Bhasma	8	2	6	0	8
8	Role of medicinal and aromatic plants in national economy and their export potential	2	0	3	0	3
9	Herbs as health food: Brief introduction and therapeutic applications of: Nutraceuticals, Antioxidants, Pro-biotics, Pre-biotics, Dietary fibres, Omega-3-fatty acids, Spirulina, Carotenoids, Soya and Garlic	4	1	3	3	7
10	Introduction to herbal formulations	4	1	3	0	4
11	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	4	2	5	0	7
12	Phytochemical investigation of drugs	2	0	3	0	3
Total		75	24	58	6	88

Scheme - J
Specification Table

Program Name : Diploma in Pharmacy
Program Code : PH
Year : First
Course Title : Human Anatomy and Physiology – Theory (HPT)
Course Code : 20114

Sr. No	Unit title	Teaching hours	Distribution of Marks			Total Marks
			R Level	U Level	A Level	
1	Scope of Anatomy and Physiology Definition of various terminologies	2	2	0	0	2
2	Structure of Cell	2	0	3	0	3
3	Tissues of the human body	4	1	3	0	4
4	Osseous system (Bones)	3	2	5	0	7
	Joints	3				
5	Haemopoietic system	8	3	5	0	8
6	Lymphatic system	3	0	3	0	3
7	Cardiovascular system	8	2	5	3	10
8	Respiratory system	4	2	0	3	5
9	Digestive system	8	2	7	0	9
10	Skeletal muscles	2	2	0	0	2
11	Nervous system	8	2	8	0	10
12	Sense organs - Anatomy and physiology of eye, ear, skin, tongue and nose	6	2	6	0	8
13	Urinary System	4	1	5	0	6
14	Endocrine system (Hormones and their functions)	6	3	3	0	6
15	Reproductive system	4	2	3	0	5
	Total	75	26	56	6	88

Scheme - J
Specification Table

Program Name : Diploma in Pharmacy
Program Code : PH
Year : First
Course Title : Social Pharmacy – Theory (SPT)
Course Code : 20115

Sr. No.	Unit title	Teaching hours	Distribution of Marks			Total Marks
			R level	U level	A level	
1	Introduction to Social Pharmacy	9	4	03	5	12
2	Preventive healthcare-Role of Pharmacist	18	4	6	10	20
3	Nutrition and Health	10	2	6	0	08
4	Introduction to Microbiology; Epidemiology; Study of Communicable diseases	28	5	12	15	32
5	Introduction to health systems and ongoing National Health Programs	8	4	3	5	12
6	Pharmacoeconomics	2	01	3	0	04
	Total	75	20	33	35	88