

Pharmaceutical Science Mapping (EMRC – Sagar)

Sl.no	E-content Module Title	ETV S.No.	Corresponding video programme title	Title of Paper	P.D. no.	Producer	Subject expert
1.	Introduction and scope of pharmaceutical sciences	1.	Introduction to pharmaceutical sciences	B.Pharm I st Sem [Pharmaceutical Chemistry – I (Inorganic Chemistry)]	ESAG/PD/71	Dheeraj Hansraj	Umesh Patil
2.	Diagnostic drugs	2.	Diagnostic Drugs	--- " ---	ESAG/PD/79	Dheeraj Hansraj	Ram Singh Bishnoi
3.	Pharmaceutical necessities preservatives	3.	Pharmaceutical necessities preservatives	--- " ---	ESAG/PD50/134	Dheeraj Hansraj	Ram Singh Bishnoi
4.	Complexation and chelation, Application in Pharmacy	4.	Complexation and chelation its application in pharmacy	--- " ---	ESAG/PD50/100	Dheeraj Hansraj	Deepti Jain
5.	Pharmaceutical Impurities – I: Sources of Impurities and their Control [Pharmaceutical Impurities – I]	5.	Pharmaceutical Impurities - I	--- " ---	ESAG/PD50/134	Dheeraj Hansraj	Surendra Kumar Jain
6.	Pharmaceutical impurities – i: limit test for iron and arsenic	6.	Pharmaceutical Impurities - I LIMIT TEST FOR Iron and Arsenic	--- " ---	ESAG/PD50/112	Dheeraj Hansraj	Surendra Kumar Jain
7.	Pharmaceutical impurities – ii: limit test for heavy metals & lead	7.	Pharmaceutical Impurities-I - Limit test for heavy metals & lead	--- " ---	ESAG/PD50/96	Dheeraj Hansraj	Surendra Kumar Jain
8.	Pharmaceutical impurities – ii: limit test for chloride and sulphate	8.	Pharmaceutical Impurities - I, Limit test for Chloride and Sulphate	--- " ---	ESAG/PD50/138	Dheeraj Hansraj	Surendra Kumar Jain
9.	Gases and Vapours: Inhalants (Oxygen), Anaesthetics (Nitrous	9.	Inhalants	--- " ---	ESAG/PD/164	Dheeraj Hansraj	Surendra Kumar Jain

	Oxide) [Inhalants]						
10.	Topical Agents: Protective (Calamine, Titanium Dioxide, Talc, Kaolin) [Topical agents]	10.	Topical Protectants	--- " ---	ESAG/PD50/125	Dheeraj Hansraj	Susanta Kumar Panda
11.	Astringents (zinc oxide, zinc sulphate) [Astringent]	11.	Astringent	--- " ---	ESAG/PD/23/153	Dheeraj Hansraj	Susanta Kumar Panda
12.	Anti-Infectives: (Boric Acid, H ₂ O ₂ , Iodine, Povidone Iodine, Potassium Permanganate, Silver Nitrate) [Study of inorganic pharmaceuticals included in IP96 antiinfective-I and II]	12.	Study of inorganic pharmaceuticals included in IP96 antiinfective-I	--- " ---	ESAG/PD/82	Dheeraj Hansraj	Jyoti Shrivastava
		13.	Study of inorganic pharmaceuticals included in IP96 antiinfective-II	--- " ---	ESAG/PD/82	Dheeraj Hansraj	Jyoti Shrivastava
13.	Pharmaceutical aids and necessities – I	14.	Pharmaceutical aids and Necessities Part-1	--- " ---	ESAG/PD/87	Dheeraj Hansraj	Ram Singh Bishnoi
14.	Pharmaceutical aids and necessities – ii	15.	Pharmaceutical aids and Necessities Part-2	--- " ---	ESAG/PD50/133	Dheeraj Hansraj	Ram Singh Bishnoi
15.	Pharmaceutical aids and necessities – iv (Antioxidant theory, The selection of Antioxidants, Official Antioxidants) [ANTIOXIDANTS]	16.	ANTIOXIDANTS	--- " ---	ESAG/PD/71, ESAG/PD50/96	Dheeraj Hansraj	S. K. Kashaw
16.	Pharmaceutical aids and necessities – vi	17.	Pharmaceutical Aids and Necessities-VI	--- " ---	ESAG/PD50/96	Dheeraj Hansraj	Ruchi Jain
17.	Nuclear chemistry – I	18.	Nuclear Chemistry	--- " ---	ESAG/PD50/95	Dheeraj Hansraj	Ramsnaeh Raghuwanshi
18.	Nuclear chemistry – II						
19.	Radiopharmaceuticals and contrast media	19.	Radiopharmaceuticals and contrast media	--- " ---	ESAG/PD50/110	Dheeraj Hansraj	Ram Singh Bishnoi

20.	Co- ordination compounds and complexation	20.	CO-ORDINATION COMPOUNDS AND COMPLEXATION	--- " ---	ESAG/PD50/100	Dheeraj Hansraj	Ram Singh Bishnoi
21.	Organic chemistry – 01 [Organic chemistry – 01]	21.	Organic chemistry – 01	B.Pharm I st Sem [Pharmaceutical Chemistry – II (Organic Chemistry-I)]	ESAG/PD/213	Dheeraj Hansraj	Nilesh Jain
22.	Organic chemistry – 02 [Organic chemistry – 02]	22.	Organic chemistry – 02	--- " ---	ESAG/PD/213	Dheeraj Hansraj	Nilesh Jain
23.	Organic chemistry – 03 [Organic chemistry – 03]	23.	Organic chemistry – 03	--- " ---	ESAG/PD/81-87	Dheeraj Hansraj	Nilesh Jain
24.	Organic chemistry – 04 [Organic chemistry – 04]	24.	Organic chemistry – 04	--- " ---	ESAG/PD/212	Dheeraj Hansraj	Nilesh Jain
25.	Organic chemistry – 05 [Organic chemistry – 05]	25.	Organic chemistry – 05	--- " ---	ESAG/PD/87	Dheeraj Hansraj	Nilesh Jain
26.	Relations of structure with properties Like density, melting point, boiling point, solubility, etc.	26.	Relations of structure with properties Like density, melting point, boiling point, solubility, etc.	--- " ---	ESAG/PD/215	Dheeraj Hansraj	Ashish Acharya
27.	Alkane, alkene, alkyne, Cycloalkane and dienes	27.	Alkane, alkene, alkyne, Cycloalkane and dienes	--- " ---	ESAG/PD/85	Dheeraj Hansraj	Ashish Acharya
28.	Alkyl halides, alcohols, Ethers, carboxylic acids [structure, nomenclature, reaction and preparation of Alkyl halides, alcohols, Ethers, carboxylic acids]	28.	structure, nomenclature, reaction and preparation of Alkyl halides, alcohols, Ethers, carboxylic acids	--- " ---	ESAG/PD/181	Dheeraj Hansraj	Pawan Kumar Basniwal
29.	Aldehydes, ketones and Amines	29.	preparation and reaction of ALDEHYDE KETONES	--- " ---	ESAG/PD/196	Dheeraj Hansraj	Pawan Kumar Basniwal

		30.	Amines	--- " ---	ESAG/PD/196	Dheeraj Hansraj	Pawan Kumar Basniwal
30.	dicarboxylic acids, malonic acid ester and its importance, acetoacetic acid ester and its importance [Dicarboxylic Acids Part -1 and 2]	31.	Dicarboxylic Acids Part -1	--- " ---	ESAG/PD50/121	Dheeraj Hansraj	Pawan Kumar Basniwal
		32.	Dicarboxylic Acids Part -2	--- " ---	ESAG/PD50/111	Dheeraj Hansraj	Pawan Kumar Basniwal
31.	Saytzeff's rule, peroxide effect, Ozonolysis, bayer's strain theory, Coulson and moffitt's modification, addition reactions of conjugated dienes [Saytzeffs Rule – 1 & 2]	33.	Saytzeffs Rule - 1	--- " ---	ESAG/PD50/115	Dheeraj Hansraj	Pawan Kumar Basniwal
		34.	Saytzeffs Rule - 2	--- " ---	ESAG/PD50/115	Dheeraj Hansraj	Pawan Kumar Basniwal
32.	Stereo chemistry – i	35.	Stero chemistry -I	--- " ---	ESAG/PD/23/148	Dheeraj Hansraj	Ashish Acharya
33.	Stereo chemistry – ii	36.	Stero chemistry -II	--- " ---	ESAG/PD/23/148	Dheeraj Hansraj	Ashish Acharya
34.	Role of solvent – i	37.	Role of solvent - I	--- " ---	ESAG/PD/140	Dheeraj Hansraj	Ashish Acharya
35.	Role of solvent – ii	38.	Role of solvent - II	--- " ---	ESAG/PD/140	Dheeraj Hansraj	Ashish Acharya
36.	History of pharmacy and Background of pharmacy profession	39.	History of pharmacy and Background of pharmacy profession	B.Pharm Ist Sem [Introduction to Pharmaceutics]	ESAG/PD/78	Dheeraj Hansraj	Surendra Kumar Jain
37.	Development of pharmacopoeia And national formulary	40.	Development of pharmacopoeia And national formulary	--- " ---	ESAG/PD50/122	Dheeraj Hansraj	Surendra Kumar Jain
38.	Code of ethics for pharmacist	41.	Code of ethics for pharmacist	--- " ---	ESAG/PD50/93, ESAG/PD50/98	Dheeraj Hansraj	Dr. Surendra Kumar Jain
39.	Pharmaceutical calculations and posology – ii	42.	Pharmaceutical calculations and posology – ii	--- " ---	ESAG/PD/76	Dheeraj Hansraj	Vandana Soni
40.	Pharmaceutical calculations and posology – i	43.	Pharmaceutical calculations and posology – i	--- " ---	ESAG/PD/76	Dheeraj Hansraj	Vandana Soni

41.	Classification of Dosages Forms, Routes of Administration – I Pharmaceutical Additives: Source, Chemical Profile, Application and Interaction [Classification of dosages forms routes of administration-I and II]	44.	Classification of dosages forms routes of administration-I	--- " ---	ESAG/PD/83	Dheeraj Hansraj	Durga Pandey
		45.	Classification of dosages forms routes of administration-II	--- " ---	ESAG/PD/83	Dheeraj Hansraj	Durga Pandey
42.	Classification of Dosages Forms, Routes of Administration – II: Formulation Considerations of Aromatic Waters, Solutions, Syrups, Elixirs, Infusions [Classification of dosage forms. Routes of administration - III]	46.	Classification of dosage forms. Routes of administration - III	--- " ---	ESAG/PD/82	Dheeraj Hansraj	Durga Pandey
43.	Classification of Dosages Forms, Routes of Administration – IV Formulation Considerations of Jellies, Mucilage, Lotion And Liniments [Classification of dosage forms. Routes of administration - IV]	47.	Classification of dosage forms. Routes of administration - IV	--- " ---	ESAG/PD/84	Dheeraj Hansraj	Ruchi Jain
44.	Classification of Dosages Forms Routes of Administration – V Formulation Considerations of Collodions, Douches, Gargles, Enemas [Classification of dosage forms. Routes of administration - V]	48.	Classification of dosage forms. Routes of administration - V	--- " ---	ESAG/PD/78	Dheeraj Hansraj	Ruchi Jain
45.	Classification of Dosages Forms, Routes of Administration – VI: Formulation Considerations of Eye Drops, Ear Drops and Nasal Drops [Classification of dosage forms. Routes of administration – VI (eye drops, ear drops and nasal drops)]	49.	Classification of dosage forms. Routes of administration – VI (eye drops, ear drops and nasal drops)	--- " ---	ESAG/PD/207	Dheeraj Hansraj	Durga Pandey

46.	Size Reduction – I: Mechanism of Size Reduction, Factors Influencing Size Reduction, Pharmaceutical Applications [Size Reduction-1]	50.	Size Reduction-1	--- " ---	ESAG/PD/78	Dheeraj Hansraj	Durga Pandey
47.	Size Reduction – II: Energy Requirements, Roller Mill, Edge Runner Mill, Ball Mill, Hammer Mill, Fluid Energy Mill, Colloid Mill, Closed Circuit Grinding [Size Reduction-2]	51.	Size Reduction-2	--- " ---	ESAG/PD/78	Dheeraj Hansraj	Jyoti Shrivastava
48.	Size Separation – I: Standard Screens, Oscillating Tray Sifter, Grating Sifters, Cyclone Separators [Size seperation-1]	52.	Size seperation-1	--- " ---	ESAG/PD/79	Dheeraj Hansraj	Jyoti Shrivastava
49.	Size Separation – II: Sedimentation, Elutriation [Size seperation-2]	53.	Size seperation-2	--- " ---	ESAG/PD/85	Dr. Pankaj Tiwari	Sandesh Asati
50.	Filtration and Clarification – I: Filtration, Mechanism of Filtration, Factors Affecting Filter Selection, Kozney's Equation [FILTRATION AND CLARIFICATION I]	54.	FILTRATION AND CLARIFICATION I	--- " ---	ESAG/PD/210	Dheeraj Hansraj	Udita Agrawal
51.	Filtration and Clarification – II: Filter Media, Filter Aids, Classification of Filters - Filter Press, Leaf Filters, Rotary Continuous Filters, Metafilters, Membrane Filters [FILTRATION AND CLARIFICATION II]	55.	FILTRATION AND CLARIFICATION II	--- " ---	ESAG/PD/210	Dheeraj Hansraj	Udita Agrawal
52.	Extraction – I & II: Leaching Process, Factors Affecting the Efficiency of Leaching Process; Diffusion Batteries, Continuous Diffusion	56.	EXTRACTION GENERAL PRINCIPLES	--- " ---	ESAG/PD/87	Dheeraj Hansraj	Piush Khare

	Batteries Dorr Agitator, Continuous Counter Current Extraction, Cragg's Apparatus [EXTRACTION GENERAL PRINCIPLES]						
53.	Introduction, elements of industrial stoichiometry	57.	Introduction and Elements of Industrial stoichiometry	B.Pharm II nd Sem [Pharmaceutical Engineering]	ESAG/PD50/122	Dheeraj Hansraj	Smita Bonde
54.	Flow of Fluids – I: Manometers, Mechanism of Fluid Flow, Bernoulli's Theorem [Flow of fluids – i]	58.	Flow of fluids – i	--- " ---	ESAG/PD/23/142	Dheeraj Hansraj	Smita Bonde
55.	Flow of Fluids – II: Friction Losses, Enlargement and Contraction Losses, Measurement of Flow of Fluids [Flow of fluids – ii]	59.	Flow of fluids – ii	--- " ---	ESAG/PD50/114	Dheeraj Hansraj	Kavita Singh
56.	Flow of Fluids – III: Transportation of Fluids: Pipe Joints, Pipe Fittings, Pumps [Flow of fluids – iii]	60.	Flow of fluids – iii	--- " ---	ESAG/PD50/114	Dheeraj Hansraj	Smita Bonde
57.	Flow of Fluids – IV: Transportation of Gases, Ejectors, Compressors, Blowers [Flow of fluids – iv]	61.	Flow of fluids – iv	--- " ---	ESAG/PD50/114	Dheeraj Hansraj	Smita Bonde
58.	Flow of Heat – I: Classification of Heat Flow Processes, Compound Resistances in Series, Flow Through Cylinder, Conduction Through Fluids [Flow of heat i]	62.	Flow of heat i	--- " ---	ESAG/PD50/114	Dheeraj Hansraj	Smita Bonde
59.	Flow of Heat – II: Overall Coefficients, Fluids in Turbulent Flow in Clean Pipes Forced and Natural Convection,	63.	Flow of heat ii	--- " ---	ESAG/PD50/114	Dheeraj Hansraj	Smita Bonde

	Condensing Vapours [Flow of heat ii]						
60.	Flow of Heat – III: Radiation, Rate of Radiation, Heat Transfer by Radiation and Convection [Flow of heat iii]	64.	Flow of heat iii	--- " ---	ESAG/PD50/114	Dheeraj Hansraj	Udita Agrawal
61.	Flow of Heat – IV: Tubular Heaters, Heat Interchangers, Inductive Heating [Flow of heat iv]	65.	Flow of heat iv	--- " ---	ESAG/PD50/114	Dheeraj Hansraj	Udita Agrawal
62.	Evaporation – I: Types of Evaporators, Jacketed Kettles, Tube Evaporators, Forced Circulation Evaporators and Evaporator Accessories [Evaporation – i]	66.	Evaporation – i	--- " ---	ESAG/PD/23/149	Dheeraj Hansraj	Tripti Shukla
63.	Evaporation – II: Evaporator Capacity-Heat and Material Balances, Multiple Effect Evaporation, Capacity of Multiple Effect Evaporators [Evaporation – ii]	67.	Evaporation – ii	--- " ---	ESAG/PD50/113	Dheeraj Hansraj	Ashwini Deshpande
64.	Distillation – I: Theory of Distillation of Mixtures: [Distillation– i]	68.	Distillation– i	--- " ---	ESAG/PD50/132	Dheeraj Hansraj	Udita Agrawal
65.	Distillation – II: McCabe Thiele Method for Calculation of Theoretical Plates, Plate Efficiency, Industrial Equipments for Vacuum, Steam, Reflux and Molecular Distillation [Distillation– ii]	69.	Distillation– ii	--- " ---	ESAG/PD50/132	Dheeraj Hansraj	Udita Agrawal
66.	Drying – I Classification of Dryers: Compartment, Tunnel, Rotary, Cylindrical, Vacuum, Spray and	70.	Drying	--- " ---	ESAG/PD50/105	Dr. Pankaj Tiwari	Shikha Agrawal

	Fluidizedbed Dryers. [Drying – i]						
67.	Drying – II Theory of Drying, Loss on Drying and Moisture Content, Equilibrium Moisture Content, Principles of Freeze Drying, Freeze Dryers. [Drying – ii]	71.	Drying – ii	--- " ---	ESAG/PD50/106	Dr. Pankaj Tiwari	Shikha Agrawal
68.	Safety Measures: Safety Methods in Pharmaceutical Laboratories and Works, Mechanical, Chemical, Electrical and Fire Hazards Including Inflammable Gases and Dusts [Safety measures]	72.	Safety measures	--- " ---	ESAG/PD50/126	Dheeraj Hansraj	Kavita Singh
69.	Centrifugation: Centrifuges, Theoretical Consideration, Laboratory Equipments, Large Scale Equipments, Low Temperature Centrifuge for Biological Work [Centrifugation]	73.	Centrifugation	--- " ---	ESAG/PD50/112	Dheeraj Hansraj	Kavita Singh
70.	Conveying: Types of Conveyers, Belt Conveyers, Chain Conveyers, Screw Conveyers, Pneumatic Conveyers, Conveyance of Manufactured Materials [Conveying]	74.	Conveying	--- " ---	ESAG/PD50/113	Dheeraj Hansraj	Ashwini Deshpande
71.	Benzene: Kekule Structure, Heat of Hydrogenation and Stability, C-C Bond Length in Benzene, Orbital Picture, Aromatic Character [Benzene Pharmaceutical Chemistry - III]	75.	Benzene Pharmaceutical Chemistry - III	B.Pharm II nd sem [Pharmaceutical Chemistry – III (Organic Chemistry-II)]	ESAG/PD50/137	Dheeraj Hansraj	Pawan Basniwal

72.	Huckel'S Rule, Mechanism of Electrophilic and Nucleophilic Aromatic Substitution, Theory of Effect of Substituent on Reactivity and Orientation [Benzene]	76.	Benzene	--- " ---	ESAG/PD50/137	Dheeraj Hansraj	Pawan Basniwal
73.	method of preparation, properties with special emphasis wherever known relation of structures and properties like Density, B.P., M.P., Solubility etc. Of: a) Arenes and its Derivatives b) Phenols [Pharmaceutical Chemistry – III (method of preparation, chemical and physical properties of arenes and its derivatives)]	77.	Pharmaceutical Chemistry – III (method of preparation, chemical and physical properties of arenes and its derivatives, phenols)	--- " ---	ESAG/PD/131	Dheeraj Hansraj	Deepti Jain
74.	method of preparation, properties with special emphasis wherever known relation of structures and properties like Density, B.P., M.P., Solubility etc. Of: a) Aryl Halides b) Sulphonic Acids [method of preparation, chemical and physical properties of Aryl halides, sulphonic acids]	78.	method of preparation, chemical and physical properties of Aryl halides, sulphonic acids	--- " ---	ESAG/PD/168	Dheeraj Hansraj	Deepti Jain
75.	method of preparation, properties with special emphasis wherever known relation of structures and properties like Density, B.P., M.P., Solubility etc. Of: a) Poly Nuclear Aromatic Hydrocarbons b) Naphthalene c) Phenanthrenes [Poly nuclear hydrocarbons]	79.	Poly nuclear hydrocarbons	--- " ---	ESAG/PD/23/147	Dr. Pankaj Tiwari	Deepti Jain

76.	method of preparation, properties with special emphasis wherever known relation of structures and properties like Density, B.P., M.P., Solubility etc. of: Hetrocyclic Compounds Nomenclature, Properties and Reactions of Pyridine, Pyrrole and Furan [Hetrocyclic compounds, nomenclature, properties and reactions of pyridine, pyrrole and furan]	80.	Hetrocyclic compounds, nomenclature, properties and reactions of pyridine, pyrrole and furan	--- " ---	ESAG/PD/217	Dr. Pankaj Tiwari	Deepti Jain
77.	Polymers and Polymerization: Copolymerization, Ionic Polymerization, Coordination Polymerization [Polymers and polymerization]	81.	Polymers and polymerization	--- " ---	ESAG/PD/79	Dheeraj Hansraj	Ashsh Acharaya
78.	Introduction, Definition, Historical Background, Present Status and Future Scope of Pharmacognosy [Introduction of pharmacognosy]	82.	Introduction of pharmacognosy	B.Pharm II nd Sem [Pharmacognosy and Phytochemistry – I]	ESAG/PD/71	Dheeraj Hansraj	Umesh Patil
79.	Plant Cell – I: Cell Organelles, their Morphology and Functions, Cell Differentiation [Plant cell]	83.	Plant cell	--- " ---	ESAG/PD/71	Dheeraj Hansraj	Umesh Patil
80.	Plant Cell – II: Introduction to Biosynthetic Pathways and Bimolecules [Introduction of Biosynthetic Pathway]	84.	Introduction of Biosynthetic Pathway	--- " ---	ESAG/PD/71	Dheeraj Hansraj	Umesh Patil
81.	Sources of Drugs – I: Terrestrial, Marine and Microbes as Source of Medicine [Sources of drugs – 01]	85.	Sources of drugs – 01	--- " ---	ESAG/PD/75	Dheeraj Hansraj	Ashiwini Singh

82.	Classification of Crude Drugs – I: Alphabetical, Morphological, Taxonomical, Pharmacological, Chemical and Biogenetic Classifications, Organized and Unorganized Drugs [Classification of crude drugs – 01]	86.	Classification of crude drugs – 01	--- " ---	ESAG/PD/71	Dheeraj Hansraj	Ashiwini Singh
83.	Classification of Crude Drugs – II: General Treatment with Regard to Occurrence, Distribution, Classification, Chemistry and Analysis of Carbohydrates, Lipids and Proteins [Classification of Crude drugs-II]	87.	Classification of Crude drugs-II part1	--- " ---	ESAG/PD/81	Dheeraj Hansraj	Ashiwini Singh
		88.	Classification of Crude drugs-II part2	--- " ---	ESAG/PD/81	Dheeraj Hansraj	Ashiwini Singh
84.	Detailed Study on Unorganized Drugs – I: With Source, Collection, Preparation, Storage, Diagnostic Characters, Constituents, Chemical Tests, Substitutes, Adulterants and Uses Of The Following: Carbohydrate And Related Drugs: Agar, Isabgol, Starch, Honey, Bael [Detailed study on unorganized drugs – 01]	89.	Detailed study on unorganized drugs – 01	--- " ---	ESAG/PD/78	Dheeraj Hansraj	Ashiwini Singh
85.	Detailed Study on Unorganized Drugs – II: Carbohydrate and Related Drugs: Pectin, Cellulose and Cellulose Derivatives [Detailed study on unorganized drugs – 02]	90.	Detailed study on unorganized drugs – 02	--- " ---	ESAG/PD50/111	Dheeraj Hansraj	Yogesh Kulakarni
86.	Detailed Study on Unorganized Drugs – III: Carbohydrate and Related Drugs: Alginates, Gum Acacia, Gum	91.	study on unorganized drugs – 03	--- " ---	ESAG/PD50/117	Dheeraj Hansraj	Yogesh Kulakarni

	Tragacanth And Other Gums and Mucilages of Pharmaceutical Importance [Detailed study on unorganized drugs – 03]						
87.	Detailed Study on Unorganized Drugs – IV Lipids and other Constituents of Following: Castor , Sesame, Olive, Almond, Corn Cotton Seed, Linseed [Detailed study on unorganized drugs – 04]	92.	Detailed study on unorganized drugs – 04 (castor sesame olive almond linseed)	--- " ---	ESAG/PD/83	Dheeraj Hansraj	Ashiwini Singh
88.	Detailed Study on Unorganized Drugs – V: Lipids and Other Constituents of Following: Neem, Chaulmoogra, Fish Products, Theobroma, Lard, Lanolin, Beeswax and Spermaceti [Detailed study on unorganized drugs – 05]	93.	Detailed study on unorganized drugs – 05	--- " ---	ESAG/PD50/100	Dheeraj Hansraj	Sita Sharan Patel
89.	Detailed Study on Unorganized Drugs – VI: Proteins and Protein Products: Study of Following Miscellaneous Substances: Surgical Fibers, Inorganic Pharmaceutical Aids: Talc, Kaolin, Bentonite, Shilajit and Common Edible Salt [Detailed study on unorganized drugs – 06]	94.	Detailed study on unorganized drugs – 06	--- " ---	ESAG/PD50/113	Dheeraj Hansraj	Yogesh Kulakarni
90.	State of Matter – I State of Matter, Gaseous State, Liquid State, Solid and Crystalline State, Liquid Crystalline State [State of matter– i]	95.	State of matter– i	B.Pharm III rd Sem [Physical Pharmaceutics]	ESAG/PD/85	Dr. Pankaj Tiwari	Hero Khan Pathan

91.	State of Matter – II: Phase Equilibrium and Phase Rule (One Component, Two Component System Containing Liquid Phase and Solid & Liquid Phase), Thermal Analysis [State of matter– ii]	96.	State of matter– ii	--- " ---	ESAG/PD/218	Dheeraj Hansraj	Ramsaneh Raghuwanshi
92.	Kinetics and Drug Stability – I: Rate and Order of Reactions, Factors Affecting Rate of Reaction, Decomposition And Stabilization of Medicinal Agents [Kinetics drug stability– i]	97.	Kinetics drug stability– i	--- " ---	ESAG/PD50/123	Dheeraj Hansraj	Pawan Basniwa
93.	Kinetics and Drug Stability – II: Kinetics in the Solid State, Accelerated Stability Analysis [Kinetics drug stability– ii]	98.	Kinetics drug stability– ii	--- " ---	ESAG/PD50/123	Dheeraj Hansraj	Pawan Basniwal
94.	Micromeritics – I: Particle Size and Size Distribution, Methods for Determining Particle Size, Particle Shape and Surface Area [Micromeritics i]	99.	Micromeritics i	--- " ---	ESAG/PD50/108	Dheeraj Hansraj	Prerana Mishra
95.	Micromeritics – II: Methods for Determining Surface Area, Pore Size, Derived Properties of Powders [Micromeritics ii]	100.	Micromeritics ii	--- " ---	ESAG/PD50/108	Dheeraj Hansraj	Ashwini Deshpande
96.	Diffusion and Dissolution – I: Steady State Diffusion, Procedures and Apparatus, Dissolution and Drug Release, Diffusion Principles in Biologic Systems [Diffusion and dissolution– i]	101.	Diffusion and dissolution– i	--- " ---	ESAG/PD50/135	Dheeraj Hansraj	Sharad Prakash Pandey
97.	Diffusion and Dissolution – II: Steady State Diffusion, Procedures	102.	Diffusion and dissolution– ii (Part A)	--- " ---	ESAG/PD50/135	Dheeraj Hansraj	Sharad Prakash Pandey

	and Apparatus, Dissolution and Drug Release, Diffusion Principles in Biologic Systems [Diffusion and dissolution– ii (A+B)]	103.	Diffusion and dissolution– ii (Part B)	--- " ---	ESAG/PD50/135	Dheeraj Hansraj	Sharad Prakash Pandey
98.	Rheology: Introduction, Newtonian System, Non Newtonian System, Thixotropy, Determination of Rheologic Properties, Viscoelasticity, Psychorheology, Applications to Pharmacy [Rheology Basic Concept]	104.	Rheology Basic Concept	--- " ---	ESAG/PD/85	Dheeraj Hansraj	Piush Khare
99.	Surface and Interfacial Phenomena: Liquid Interfaces, Adsorption at Liquid Interfaces, Adsorption at Solid Interfaces, Electrical Properties of Interfaces [Surface and interfacial phenomena (part 1+2)]	105.	Interfacial Phenomenon Part - 1	--- " ---	ESAG/PD50/122	Dheeraj Hansraj	Kavita Singh
		106.	Interfacial Phenomenon Part - 2	--- " ---	ESAG/PD50/122	Dheeraj Hansraj	Kavita Singh
100.	Colloids: Introduction, Types of Colloidal Systems, Optical, Kinetic and Electric Properties of Colloids, Solubilisation [Colloidal systems]	107.	Colloidal System	--- " ---	ESAG/PD/158	Dheeraj Hansraj	Sharad Prakash Pandey
101.	Coarse Dispersions – I: Suspensions, Interfacial Properties of Suspended Particles, Settling in Suspensions [Coarse dispersion i]	108.	Coarse Dispersion - I	--- " ---	ESAG/PD50/98	Madhav Chandra	Swapnil G. Patil
102.	Coarse Dispersions – II: Emulsions, Theories of Emulsification, Physical Stability of Emulsions, Preservation of Emulsions, Rheologic Properties of	109.	Coarse Dispersion - II	--- " ---	ESAG/PD50/104	Madhav Chandra	Swapnil G. Patil

	Emulsions, Phase Equilibria and Emulsion Formulation, Special Emulsion Systems [Coarse dispersion ii]						
103.	Complexation and Protein Binding – I Metal Complexes, Organic Molecular Complexes, Inclusion Compounds, Methods of Analysis [Complexation and protein binding – i]	110.	Complexation and Protein Binding-I	--- " ---	ESAG/PD50/99	Madhav Chandra	Kavita Singh
104.	Complexation and Protein Binding – II: Protein Binding, Complexation and Drug Action, Crystalline Structure of Complexes, Thermodynamic Treatment of Stability Constants [Complexation and protein binding – ii]	111.	Complexation and Protein Binding-II	--- " ---	ESAG/PD50/100	Madhav Chandra	Kavita Singh
105.	Compaction and Compression – I: Compression Characteristics of Powders And Granules, Physics of Tablet Compression, Measurement of Punch Forces [Compaction and compression– i]	112.	Compaction and compression– i (Part A)	--- " ---	ESAG/PD50/99	Madhav Chandra	Agnivesh Shrivastava
		113.	Compaction and compression– i (Part B)	--- " ---	ESAG/PD50/99	Madhav Chandra	Agnivesh Shrivastava
106.	Compaction and Compression – II: Transmission of Forces Through Powders, Distribution of Forces in Powder Mass, Factors Affecting Strength of Tablets [Compaction and compression– ii]	114.	Compaction and compression– ii	--- " ---	ESAG/PD50/99	Madhav Chandra	Agnivesh Shrivastava
107.	Crystallization – I: Introduction, Nucleation and Crystal Growth, Crystal Type, Theory of Crystallization [Crystallization– i]	115.	Crystallization– i	--- " ---	ESAG/PD50/100	Madhav Chandra	Kavita Singh
108.	Crystallization – II:	116.	Crystallization– ii	--- " ---	ESAG/PD50/117	Madhav	Kavita Singh

	Batch Crystallizers, Simple Vacuum Crystallizers, Prevention of Crystals Caking [Crystallization– ii]					Chandra	
109.	Heterocyclic Compounds – I: Nomenclature, Structure and Reaction of Imidazoles, Oxazoles, Thiazoles, Pyrazole, Pyran, Pyrimidines, Indole [Heterocyclic Compounds - I]	117.	Heterocyclic Compounds - I	B.Pharm III rd Sem [Pharmaceutical Chemistry - IV (Chemistry of Natural Product)]	ESAG/PD50/106, ESAG/PD50/112	Madhav Chandra	Shashikant B. Bagade
110.	Heterocyclic Compounds – I: Nomenclature, Structure and Reaction of Imidazoles, Oxazoles, Thiazoles, Pyrazole, Pyran, Pyrimidines, Indole [Chemistry of natural product – ii]	118.	Chemistry of Natural Product Heterocyclic Compound - II	--- " ---	ESAG/PD50/112	Madhav Chandra	Shashikant B. Bagade
111.	Carbohydrates – I: Classification, Monosaccharides, Glucose, Fructose and their Reactions, Configuration of Aldoses, Cyclic Structure of D-Glucose, Mutarotation and Conformations [Carbohydrate i]	119.	Carbohydrate i	--- " ---	ESAG/PD50/97, ESAG/PD50/103	Madhav Chandra	Ravi Tiwari
112.	Carbohydrates – II: Amino Sugars, D-Ribose, 2-Deoxy Dribose, Disaccharides, Maltose, Lactose, Sucrose, Polysaccharides, Starch, Cellulose, Dextrin, Glycogen, Inulin, Dextrins [Carbohydrate ii]	120.	Carbohydrate ii	--- " ---	ESAG/PD50/103	Madhav Chandra	Jineetkumar B. Gawad
113.	Glycosides – I: Classification and Methods of Isolation Alpha and Beta D-	121.	Glycosides i	--- " ---	ESAG/PD50/92	Madhav Chandra	Payal R. Dande

	Methylglucoside, Structure of Salicin, Arbutin, Amygdalin [Glycosides i]						
114.	Glycosides – II: Structure of Sinigrin, Anthraquinone Glycosides, Tannins, Cardiac Glycosides and Saponins [Glycosides ii]	122.	Glycosides ii	--- " ---	ESAG/PD50/92	Madhav Chandra	Payal R. Dande
115.	Glycosides – III: Structure of Sinigrin, Anthraquinone Glycosides, Tannins, Cardiac Glycosides and Saponins [Glycosides iii]	123.	Glycosides iii	--- " ---	ESAG/PD50/92	Madhav Chandra	Payal R. Dande
116.	Proteins and Amino Acids – I & II: Isolation and Classification of Proteins, Hydrolysis, Fibrous and Globular Proteins Classification, Methods of Synthesis and Properties of Amino Acids, Nucleoproteins and Nucleic Acids and General Knowledge of Nitrogenous Bases in Nucleic Acids [Protein isolation and classification of protein]	124.	Protein isolation and classification of protein	--- " ---	ESAG/PD/208	Madhav Chandra	S. K. Kashaw
117.	Proteins and Amino Acids – III : Structure of Nucleosides and Nucleotides, Structure of Nucleic Acids, Favones and Isoflavones, Coumarines, Porphyrines [Protein and aminoacid – iii]	125.	Protein and aminoacid – iii	--- " ---	ESAG/PD50/88	Madhav Chandra	Chandrakant Bonde
118.	Structure Lipids Fats Oils and Waxes, Fatty Acids: Characterization and Their Physico-Chemical Properties,	126.	Lipids Fats Oils & Waxes, Fatty Acids	--- " ---	ESAG/PD/23/140	Madhav Chandra	Shashikant B. Bagade

	General Knowledge of Phospholipids, Lecithins, Cephalines, Sphingomyeline, Glycolipids, Lipoproteins [Structure lipids fats oils and waxes, fatty acids]						
119.	Terpenes: Isolation, Classification, General Methods of Determining Structure with Reference to Citral, Carvone, Thymol, Menthol and Camphor, An Elementary Treatment of Rubber [Terpenes part 1 & 2]	127.	Terpen Part-1	--- " ---	ESAG/PD50/125	Madhav Chandra	Payal R. Dande
		128.	Terpen Part-2	--- " ---	ESAG/PD50/125	Madhav Chandra	Payal R. Dande
120.	Alkaloids: General Methods of Determining Structure of Alkaloids, Classification with an Acquaintance with the Structure of Alkaloids of IP, Structure Elucidation of Ephedrine, Nicotine and Xanthine Derivatives Like Caffeine, Theobromine and Theophylline [Alkaloids]	129.	Alkaloids	--- " ---	ESAG/PD/23/149	Madhav Chandra	Shashikant B. Bagade
121.	Introduction to the scope of Microbiology: Historical Background, Scope of Microbiology, Classification of Microbes and their Taxonomy Actinomycetes, Bacteria, Rickettsiae, Spirochetes and Viruses [Introduction to the scope of microbiology]	130.	Introduction to Microbiology	B.Pharm III rd Sem [Pharmaceutical Microbiology]	ESAG/PD50/94	Madhav Chandra	Amit B. Page
122.	Identification of Microbes:	131.	Identification of	--- " ---	ESAG/PD50/122	Madhav	Swapnil G. Patil

	Stain and Types of Staining Techniques, Electron Microscopy. Nutrition, Cultivation, Isolation and Identification of Bacteria, Actinomycetes, Fungi, Viruses [Identification of microbes]		Microbes			Chandra	
123.	Control Of Microbes by Physical and Chemical Methods – I: Disinfection, Factors Influencing Disinfectants, Dynamics of Disinfection, Disinfectants, Antiseptics and their Evaluation [Control of microbes by physical and chemical methods – 01]	132.	Control of microbes by physical and chemical methods – 01	--- " ---	ESAG/PD50/100	Madhav Chandra	Agnivesh Shrivastava
124.	Control Of Microbes by Physical and Chemical Methods – II: Sterilization: Different Methods, Validation of Sterilization Methods and Equipments, Clean Area Classification [Control of microbes by physical and chemical methods – 02]	133.	Control of microbes by physical and chemical methods – 02	--- " ---	ESAG/PD50/104	Madhav Chandra	Agnivesh Shrivastava
125.	Sterility Testing of Pharmaceutical Products, Preservative Efficacy, Microbial Assay of Antibiotics and Vitamin B12 [Sterility testing of pharmaceutical products.]	134.	Sterility testing of pharmaceutical products,preservative efficacy	--- " ---	ESAG/PD50/139	Madhav Chandra	Agnivesh Shrivastava
126.	Immunology and Immunological Preparations – I: Principles, Antigens and Haptens, Immune System, Cellular And Humoral Immunity [Immunology and immunological preparations-I]	135.	Immunology and immunological preparations-I	--- " ---	ESAG/PD/182	Madhav Chandra	Rupal Dubey
127.	129 (B): Immunology and Immunological	136.	Immunology and immunological	--- " ---	ESAG/PD50/229	Madhav Chandra	Rupal Dubey

	Preparations – II: Immunological Tolerance, Antigen-Antibody Reactions and Their Applications [Immunology and immunological preparations-II]		preparations-II				
128.	Immunology and Immunological Preparations – III: Introduction to Hyper Sensitivity and its types, Immunizing Agents, Preparation and Standardization of Immunizing Agents, Storage and Handling of Immunizing Agents [Immunology and immunological preparations-III]	137.	Immunology and immunological preparations-III	--- " ---	ESAG/PD/182	Madhav Chandra	Rupal Dubey
129.	Bacterial Enzymes – I: Techniques of Immobilization of Enzymes, Kinetics and Factors Affecting Enzyme Kinetics. Study of Enzymes such as Hyaluronidase, Penicillinase, Streptokinase [Bacterial enzymes – i]	138.	Bacterial Enzymes Part-I (Enzyme Immobilization Methods and Applications)	--- " ---	ESAG/PD50/130	Madhav Chandra	Parshuram Shendge
130.	Bacterial Enzymes – II: Study of Enzymes Such as Streptodornase, Amylases and Proteases Immobilization of Bacteria and Plant Cells [Bacterial enzymes – ii]	139.	Bacterial Enzyme - II	--- " ---	ESAG/PD50/103	Madhav Chandra	Payal R Dande
131.	Commerce in Crude Drugs: Collection, Preparation, Drying and Storage of Drugs with Special Emphasis on Factors Influencing Quality of Drugs [Study of crude drugs – I (part a & b)]	140.	Study of crude drugs – I (part A)	B.Pharm III rd Sem [Pharmacognosy & Phytochemistry II]	ESAG/PD50/117	Madhav Chandra	Payal R Dande
		141.	Study of crude drugs – I (part B)	--- " ---	ESAG/PD50/117	Madhav Chandra	Payal R Dande
132.	Classification and General Treatment of Alkaloids and	142.	Classification and general treatment of	--- " ---	ESAG/PD/214	Madhav Chandra	Payal R Dande

	Glycosides of Different Categories Including Methods of Isolations Physico Chemical Properties and Chemical Tests for Identification		alkaloids and glycosides				
133.	Systematic Study of Crude Drugs Including Synonyms, Biological / Geographical Sources, Identification, Chemical Constituents, Chemical Tests, Uses, Adulteration and Evaluation of Glycosidal and Alkaloidal Drugs [Study of crude drugs]	143.	crude drugs	--- " ---	ESAG/PD23/176	Madhav Chandra	Payal R Dande
		144.	Study of crude drugs - 01	--- " ---	ESAG/PD23/176	Madhav Chandra	Payal R Dande
134.	Anthraquinone Glycosidal Drugs: Senna, Aloe, Rhubarb, Cascara etc. [Study of crude drugs (anthraquinone glycosidal drugs)]	145.	Study of crude drugs	--- " ---	ESAG/PD23/177	Madhav Chandra	Payal R Dande
135.	Systematic Study of Crude Drugs – II Saponin Glycosidal Drugs: Especially, Dioscorea, Solanum, Licorice, Senega, Ginseng [Study of crude drugs – iil]	146.	Study of crude drugs – iil	--- " ---	ESAG/PD/81	Madhav Chandra	Payal R Dande
136.	Systematic Study of Crude Drugs – IV: Miscellaneous Glycosidal Drugs: Gentian, Quassia, and Saffron etc. [Study of crude drugs – iv (part 1 & 2)]	147.	Study of crude drugs – iv (part 1)	--- " ---	ESAG/PD50/139	Madhav Chandra	Payal R Dande
		148.	Study of crude drugs – iv (part 2)	--- " ---	ESAG/PD50/139	Madhav Chandra	Payal R Dande
137.	Systematic Study of Crude Drugs – V Indole Alkaloidal Drugs: Especially Ergot, Nux-Vomica, Rauwolfia, Catharanthus [Study of crude drugs – v (part 1)]	149.	Study of crude drugs – v (part 1)	--- " ---	ESAG/PD50/124	Madhav Chandra	Payal R Dande
138.	Isoquinoline Alkaloidal Drugs: Including Ipecac, Opium, Curare	150.	Study of crude drugs – v (part 2)	--- " ---	ESAG/PD50/124	Madhav Chandra	Payal R Dande

	[Study of crude drugs – v (part 2)]						
139.	Systematic Study of Crude Drugs – VI Tropane Alkaloidal Drugs: Stramonium, Hyoscyamus, Datura, Belladonna, Duboisia etc. [Study of crude drugs – vi]	151.	Study of crude drugs – vi	--- " ---	ESAG/PD50/139	Madhav Chandra	Payal R Dande
140.	Systematic Study of Crude Drugs – VII Pyridine Alkaloidal Drugs: Especially Areca, Lobelia, Nicotiana Imidazole Alkaloidal Drugs: Including Pilocarpus [Study of crude drugs – vii]	152.	Study of crude drugs – vii	--- " ---	ESAG/PD50/111	Madhav Chandra	Payal R Dande
141.	Systematic Study of Crude Drugs – VIII: Quinazoline Alkaloidal Drugs: Including Vasaka Steroidal Alkaloidal Drugs: Especially Ashwagandha, Kurchi, Veratrum, Solanum [Study of crude drugs – viii]	153.	Study of crude drugs – viii	--- " ---	ESAG/PD50/124	Madhav Chandra	Payal R Dande
142.	Systematic Study of Crude Drugs – IX: Proto-Alkaloidal Drugs: Ephedra, Colchicum Etc. Terpenoid Alkaloidal Drugs: Including Aconite [Study of crude drugs – ix]	154.	Study of crude drugs – ix	--- " ---	ESAG/PD50/111	Madhav Chandra	Payal R Dande
143.	Preformulation study– i + ii + iii [Preformulation study]	155.	Preformulation study	B.Pharm IV th Sem [Dosage Form Design]	ESAG/PD/204	Madhav Chandra	Ashwini Deshpande
144.	Polymer Sciences – I Introduction, Classification and Pharmaceutical Applications of Polymers, Polymers as Thickening Agents, Preparing Polymer	156.	POLYMER SCIENCES - I	--- " ---	ESAG/PD/85	Madhav Chandra	Y. S. Dangi

	Solutions of Polymers [POLYMER SCIENCES - I]						
145.	Polymer Sciences – II: Phase Separation, Gel Formation, Mechanical Properties of Polymeric Films, Future Trends in Pharmaceutical and Other Biomedical Uses [Polymers 02]	157.	Polymer II	--- " ---	ESAG/PD/174	Madhav Chandra	Y. S. Dangi
146.	Process Validation – I: Prospective, Concurrent, Ritrospective and Revalidation, Process Capability and Statistical Evaluation of Process Validation Data [Process validation i]	158.	Process validation i	--- " ---	ESAG/PD50/87 A	Madhav Chandra	Smita Bonde
147.	Process Validation – II: Process Validation of Following Formulation: Uncoated Tablets, Capsules, Small Volume Injectables, Oral Liquids, Ointment/Cream, Regulatory Requirements for Validation [Process validation ii]	159.	Process validation ii	--- " ---	ESAG/PD50/87 A	Madhav Chandra	Smita Bonde
148.	SOP for Different Dosage Forms: Introduction and Purpose of SOPs, Benefits and Types of Sops, SOP Development and Format, SOP of Oral Liquids, Tablet and Capsule Manufacturing [SOP for different dosage forms]	160.	SOP for Different Dosage forms	--- " ---	ESAG/PD50/88	Madhav Chandra	Smita Bonde
149.	Optimization Techniques in Pharmaceutical Operation and Processes: Introduction, Optimization Parameters, Methods used for Optimization, Applications of	161.	Optimization techniques in pharmaceutical operation and processes	--- " ---	ESAG/PD/201	Dr. Pankaj Tiwari	Dr. Rupal Dubey

	Optimization [Optimization techniques in pharmaceutical operation and processes]						
150.	Mixing: Mechanism of Mixing, Equipment and Selection, Solid-Solid, Solid-Liquid and Liquid-Liquid Mixers Used in Pharmaceutical Industry [Mixing]	162.	MIXING	--- " ---	ESAG/PD50/95	Madhav Chandra	Kavita Singh
151.	Material for Construction of Pharmaceutical Plant – I: The Nature, Properties and Uses of Important Materials Employed in the Construction of Plants Material for Construction of Pharmaceutical Plant – II: Corrosion Heat and Corrosion Resistant Alloys and Other Materials, Methods of Reducing Corrosion, Protective Coating [Material for construction of pharmaceutical plant]	163.	Material for construction of Pharmaceutical Plant	--- " ---	ESAG/PD50/108	Madhav Chandra	Kavita Singh
152.	Active, Passive Immunization: Vaccines, Types of Vaccines and Principle Involved, Their Preparations, Standardization and Storage [Active, passive immunization]	164.	Active, passive immunization	B.Pharm IV th Sem [Pharmaceutical Biotechnology]	ESAG/PD/197	Dr. Pankaj Tiwari	Sudeesh
153.	Genetic Recombination, Transformation, Conjugation, Transduction, Protoplast Fusion and Gene Cloning and Their Applications [Genetic recombination]	165.	Genetic recombination	--- " ---	ESAG/PD50/125	Madhav Chandra	Rahsmi Tambe
154.	Development of Hybridoma for Monoclonal Antibodies, Study of	166.	Development of hybridoma for	--- " ---	ESAG/PD50/141	Madhav Chandra	Rahsmi Tambe

	Drugs Produced by Biotechnology such as Activase, Humulin, Humatrope, HB etc. [Development of hybridoma for monoclonal antibodies (part 1 & 2)]		monoclonal antibodies Part - 1				
		167.	Development of hybridoma for monoclonal antibodies Part - 2	--- " ---	ESAG/PD50/130	Madhav Chandra	Rahsmi Tambe
155.	Antibiotics i + ii [Antibiotics]	168.	Antibiotics	--- " ---	ESAG/PD50/102	Madhav Chandra	Rahsmi Tambe
156.	Microbial Transformation - I & II	169.	Microbial Transformation - I & II	--- " ---	ESAG/PD50/114	Madhav Chandra	Santosh Umakant Yele
157.	Enzyme Immobilization – I: Techniques of Immobilization, Factors Affecting Enzyme Kinetics, Immobilization of Bacteria & Plant Cells [Enzyme Immobilization Methods and Applications]	170.	Enzyme Immobilization Methods and Applications	--- " ---	ESAG/PD50/130	Madhav Chandra	Santosh Umakant Yele
158.	Enzyme Immobilization – II: Study of Enzymes Such as Hyaluronidase, Penicillinase, Streptokinase & Streptodornase, Amylases & Proteases etc. [Enzyme Immobilisation – II (A & B)]	171.	Enzyme Immobilisation – II (A)	--- " ---	ESAG/PD50/336	Dr. Pankaj Tiwari	Rupal Dubey
		172.	Enzyme Immobilisation – II (B)	--- " ---	ESAG/PD50/336	Dr. Pankaj Tiwari	Rupal Dubey
159.	Plant Tissue Culture – I: Historical Development of Plant Tissue Culture, Types of Tissue Cultures. Plant Tissue Culture-II Their Nutritional Requirements, Growth and Main Features, Applications of Plant Tissue Culture in Pharmacy [Plant tissue culture-I & II]	173.	Plant tissue culture-I	--- " ---	ESAG/PD50/228	Dr. Pankaj Tiwari	Prashant Sahu + S. K. Kasaw
		174.	Plant tissue culture-II	--- " ---	ESAG/PD50/228	Dr. Pankaj Tiwari	Prashant Sahu + S. K. Kasaw

160.	Introduction – I: Computation of Analytical Results, Significant Figures Introduction – II: Precision and Accuracy, Standard Deviations Introduction – III: Rejection of Doubtful Values with Special Reference to Volumetric and Gravimetric Analysis [Introduction of pharmaceutical analysis– i]	175.	INTRODUCTION OF PHARMACEUTICAL ANALYSIS-I	B.Pharm IV th Sem [Pharmaceutical Analysis – I]	ESAG/PD50/114	Madhav Chandra	Asmita Gajbhiye
161.	Introduction – IV: Concept of Error, Calibration of Analytical Equipments Introduction – V: Fundamentals of Volumetric Analysis, Method of Expressing Concentrations, Primary and Secondary Standards [Introduction of pharmaceutical analysis– ii]	176.	INTRODUCTION OF PHARMACEUTICAL ANALYSIS-II	--- " ---	ESAG/PD50/126	Madhav Chandra	Asmita Gajbhiye
162.	Acid Base Titrations – I: Acid Base Concepts, Role of Solvents. Acid Base Titrations – II: Relative Strengths of Acids and Bases, Ionization, Acid Base Titrations – III: Law of Mass Action, Common Ion Effect, Ionic Product of Water, pH [Introduction of Acid–Base Titration - III]	177.	Introduction of Acid–Base Titration - III	--- " ---	ESAG/PD50/130	Madhav Chandra	Asmita Gajbhiye
163.	Precipitation Titrations – I: General Discussion, Theory of Indicators	178.	Precipitation	--- " ---	ESAG/PD50/115	Madhav Chandra	Shirish Deshpande

	Precipitation Titrations – II: Argentometric Titrations, Ammonium Thiocyanate-Silver Salt Titrations Precipitation Titrations – III: Mohr’s Method, Volhard’s Method and Fajan’s Method [Precipitation]						
164.	Group Estimations – I: Determination of Aldehyde, Ketones, Hydroxyl, Phenolic, Carboxylic Acid, Methoxy Groups as Applied to Photochemicals [Group estimations – i]	179.	Group Estimations - I	--- " ---	ESAG/PD50/92	Madhav Chandra	Shirish Deshpande
165.	Group Estimations – II: Determination of Aldehyde, Ketones, Hydroxyl, Phenolic, Carboxylic Acid, Methoxy Groups as Applied to Photochemicals [Group estimations – ii]	180.	Group Estimations - II	--- " ---	ESAG/PD50/92	Madhav Chandra	Shirish Deshpande
166.	Use of Polarimetry, Refractometry in Analysis of Drugs [Use of polarimetry, refractometry in analysis of drugs]	181.	Use of Polarimetry, Refractometry in analysis of drugs	--- " ---	ESAG/PD50/91	Madhav Chandra	Shashikant B. Bagade
167.	Prescription – I: Definition, Parts, Handling, Sources of Errors in Prescriptions Prescription – II: Knowledge of Latin Terms Commonly used in Prescription Writing and their Translation into English. Modern Concepts of Dispensing Pharmacy [Prescription]	182.	Prescription	B.Pharm IV th Sem [Pharmacy Practice (Dispensing and Community Pharmacy)]	ESAG/PD50/87 A	Madhav Chandra	Kavita Singh
168.	Compounding of Medication – I: Powders, Tablets, Capsules, Tablet	183.	Compounding of medication i+ii	--- " ---	ESAG/PD50/113	Madhav Chandra	Swapnil G. Patil

	Triturates, Pills, Lozenges [Compounding of medication i+ii]						
169.	Compounding of Medication – II: Ointments, Creams, Pastes, Jellies, Suppositories [Compounding of medication i+ii]						
170.	Compounding of Medication – III: Suspensions, Emulsions, Mixtures, Sprays, Inhalations, Paints, Labelling of Dispensed Products [Compounding of medication iii]	184.	Compounding of medication iii	--- " ---	ESAG/PD50/113	Madhav Chandra	Swapnil G. Patil
171.	Incompatibility: Physical, Chemical and Therapeutic Incompatibilities and Their Corrections [Incompatibility]	185.	Incompatibility	--- " ---	ESAG/PD50/106	Madhav Chandra	Swapnil G. Patil
172.	Radiopharmaceuticals – I: Radioactivity and Radionuclide, Production of Radiopharmaceuticals [Radiopharmaceuticals i]	186.	Radiopharmaceuticals i	--- " ---	ESAG/PD/84	Madhav Chandra	Vandana Soni
173.	Radiopharmaceuticals – II: Radioactive Decay, Measurement of Radiation, Radiopharmaceutical Dosage Forms [Radiopharmaceuticals ii]	187.	Radiopharmaceuticals ii	--- " ---	ESAG/PD50/121	Madhav Chandra	Mrityunjay Pandey
174.	Radiopharmaceuticals – III: Methods of Radiation Detection, Radiopharmaceutical Having Therapeutic/ Diagnostic Applications [Radiopharmaceuticals iii]	188.	Radiopharmaceuticals iii	--- " ---	ESAG/PD50/112	Madhav Chandra	Vandana Soni
175.	Community Pharmacy – I: Introduction and Management, Community Pharmacy Community Pharmacy – II:	189.	Community pharmacy – 1	--- " ---	ESAG/PD50/99	Madhav Chandra	Sateesh Belemkar

	Organization and Structure of Retail And Wholesale Drug Store- Types of Drug Stores and Design [Community pharmacy – 1]						
176.	Community Pharmacy – III: Legal Requirements for Establishment, Maintenance of Drug Store Community Pharmacy – IV: Dispensing of Proprietary Products, Maintenance of Records of Retail and Whole Sale [Community pharmacy – 3+4]	190.	Community pharmacy – 3+4	--- " ---	ESAG/PD50/98	Madhav Chandra	Shashikant B. Bagade
177.	Inventory Control in Community Pharmacy: Definition, Various Methods of Inventory Control, ABC, VED, EOQ, Lead Time, Safety, Stock [Inventory control in community pharmacy]	191.	Inventory control in community pharmacy	--- " ---	ESAG/PD50/94	Madhav Chandra	Sateesh Belemkar
178.	Pharmaceutical Care – I: Definition and Principles of Pharmaceutical Care. Emergency Treatment in Shock, Snake-Bite, Burns [Pharmaceutical care– i]	192.	Dispensing and Community Pharmacy	--- " ---	ESAG/PD50/101	Madhav Chandra	Shashikant B. Bagade
179.	Pharmaceutical Care – II: Emergency Treatment in Poisoning, Heart Diseases, Fractures, Resuscitation Methods, Elements of Minor Surgery and Dressings [Pharmaceutical care– ii]	193.	Pharmaceutical care-II	--- " ---	ESAG/PD50/96	Madhav Chandra	Sateesh Belemkar
180.	Health Education – I: WHO Definition, Health Promotion Care of Child, Pregnant and Breast Feeding Women and Geriatric	194.	Health education – i	--- " ---	ESAG/PD50/93	Madhav Chandra	Shashikant B. Bagade

	Patient [Health education – i]						
181.	Health Education – II: Role of Pharmacist in Family Planning. Prevention of Communicable Diseases i.e., Tuberculosis, Hepatitis, Leprosy, AIDS, Syphilis, Gonorrhoea [Health education – ii]	195.	Health education – ii	--- " ---	ESAG/PD50/93	Madhav Chandra	Shashikant B. Bagade
182.	Introduction to Cosmetics, their Applications, Origin and Development of Cosmetic Sciences, Basic Knowledge of Skin, Role of Hormones and Vitamins in Skin Nutrition [Introduction to cosmetics]	196.	Introduction to cosmetics	B.Pharm V th Sem [Cosmetic Technology]	ESAG/PD50/138	Madhav Chandra	Sateesh Belemkar
183.	Dermatitis and Allergy, Primary Irritants, Photosensitization, Allergy and Antihistaminics in Cosmetics [Dermatitis and allergy, primary irritants, photosensitization, allergy and antihistaminics in cosmetics]	197.	Dermatitis and allergy, primary irritants, photosensitization, allergy and antihistaminics in cosmetics	--- " ---	ESAG/PD/23/152	Madhav Chandra	Sanju Nanda
184.	Preservation, Performance and Evaluation of Cosmetic Materials [Preservation of cosmetic materials – 01-02]	198.	Preservation of cosmetic materials - 01	--- " ---	ESAG/PD23/192	Madhav Chandra	Sanju Nanda
		199.	Preservation of cosmetic materials - 01	--- " ---	ESAG/PD23/192 225	Madhav Chandra	Sanju Nanda
185.	Cosmetic Colours – I: Natural and Synthetic Colours Including Plant and Animal Origin Colours Cosmetic Colours – II: Lakes, Pigments and Inorganic Colours [Colour in Cosmetics]	200.	Colour in Cosmetics	--- " ---	ESAG/PD/173	Madhav Chandra	Sanju Nanda
186.	Perfumes in Cosmetics – I Synthetic, Natural and Artificial	201.	Perfume in Cosmetic Part - I	--- " ---	ESAG/PD/173	Madhav Chandra	Sanju Nanda

	Perfumes, Perfumes In Cosmetics – II Classification of Perfumes, Manufacturing and Blending of Perfumes [Perfume in Cosmetic Part – I & III]	202.	Perfume in Cosmetic Part - II	--- " ---	ESAG/PD/173	Madhav Chandra	Sanju Nanda
187.	Perfumes in Cosmetics – I Synthetic, Natural and Artificial Perfumes, Perfumes In Cosmetics – II Classification of Perfumes, Manufacturing and Blending of Perfumes [Perfumes in cosmetics]	203.	Perfumes in cosmetics	--- " ---	ESAG/PD/23/152	Madhav Chandra	Ashwini Deshpande
188.	Skin Creams and Lotions – I: Classification of Skin Creams, Cold, Vanishing, All Purpose & Emollient Creams [Skin creams and lotions]	204.	Skin creams and lotions	--- " ---	ESAG/PD50/88 ESAG/PD50/227	Madhav Chandra	Smita Bonde
189.	Skin Creams and Lotions – II: Cleansing Creams, Foundation Creams, Hand Creams, Protective and Barrier Creams [Skin creams and lotions – ii]	205.	Skin creams and lotions – ii	--- " ---	ESAG/PD50/88 ESAG/PD50/227	Madhav Chandra	Ashwini Deshpande
190.	Hair Preparations – I: Shampoos, Hair Setting Lotions, Conditioners, Hair Tonics, Hair Bleaches Hair Preparations – II: Hair Colouring Dyes, Permanent Waving, Hair Straighteners, Antidandruff Preparations [Hairs preparation]	206.	Hairs prepration	--- " ---	ESAG/PD50/106	Madhav Chandra	Swarnlata Saraf
191.	Face Powders and Makeup – I:	207.	face Powder and	--- " ---	ESAG/PD50/104	Madhav	Swarnlata Saraf

	Face Powders, Compact Powder, Cake Make Up, Make Up Cream [face Powder and Makeup]		Makeup			Chandra	
192.	Face Powders and Makeup – II Liquid Makeup, Stick Makeup and Liquid Powder, Beauty Masks Coloured Makeup: Lipsticks, Rouges and Eye Makeup [Coloured makeup Preparation – II]	208.	Coloured makeup Preparation – II	--- " ---	ESAG/PD50/95	Madhav Chandra	Swarnlata Saraf
193.	Manicure Preparations – I Cuticle Remover, Nail Bleach, Nail Whites, Manicure Preparations – II Nail Creams, Nail Lacquer and Enamel Remover [Manicure Preparations]	209.	Manicure Preparations	--- " ---	ESAG/PD/23/152	Madhav Chandra	Swarnlata Saraf
194.	Dental Products: Dentifrices and Mouth Washes, Astringents and Skin Tonics [Dental product]	210.	Dental product	--- " ---	ESAG/PD23/188	Madhav Chandra	Sateesh Belemkar
195.	Biochemistry and its Importance in Pharmaceutical Sciences, Biochemical Organization of the Cell, Production of Cell Energy, ATP and its Biological Significance, Biochemical Importance of Colloidal Systems, Donnan Effect [biochemistry]	211.	biochemistry	B.Pharm V th Sem [Biochemistry]	ESAG/PD50/103	Madhav Chandra	Shashikant B. Bagade
196.	Enzymes-I: Classification, Nomenclature, Factors Affecting Enzyme Action, Enzyme Kinetics [Enzymes – i]	212.	Enzymes – i	--- " ---	ESAG/PD/71	Madhav Chandra	Shovanlal Gayen
197.	Enzymes – II: Mode and Mechanism of Enzyme Action and Inhibition, Isozymes	213.	Enzymes – ii	--- " ---	ESAG/PD50/113	Madhav Chandra	Swapnil Patil

	and their Importance in Diagnosis [Enzymes – ii]						
198.	Enzymes – III: Vitamins as Co-Enzymes and their Significance, Metals as Co-Factors [Enzymes – iii]	214.	Enzymes – iii	--- " ---	ESAG/PD50/113	Madhav Chandra	Swapnil Patil
199.	Carbohydrate Metabolism – I: Classification, Glycolysis, Citric Acid Cycle [Carbohydrate metabolism i]	215.	Carbohydrate metabolism i	--- " ---	ESAG/PD/209	Madhav Chandra	Chandrakant Bonde
200.	Carbohydrate Metabolism – II: Glycogenesis and Glycogenolysis, Hexose Monophosphate Shunt Carbohydrate Metabolism – III: Uronic Acid Pathway, Blood Sugar and its Regulation [Carbohydrate metabolism ii+iii]	216.	Carbohydrate metabolism ii+iii	--- " ---	ESAG/PD50/98	Madhav Chandra	Chandrakant Bonde
201.	Lipid Metabolism – I: Oxidation of Fatty Acids, Biosynthesis of Fats, Ketogenesis and Ketosis Lipid Metabolism – II: Metabolism of Cholesterol, Essential Fatty Eicosanoids Phospholipids, Sphingolipids [Lipid metabolism– i+ii]	217.	Lipid Metabolism - I	--- " ---	ESAG/PD50/107	Madhav Chandra	Parshuram Shendge
202.	Lipid Metabolism – III: Biological Oxidation and Reduction, Respiratory Chain, Oxidative Phosphorylation, Enzymes and Co-Enzymes of Bioredox System [Lipid metabolism– iii]	218.	Lipid metabolism– iii	--- " ---	ESAG/PD50/107	Madhav Chandra	Payal Naik
203.	Metabolism of Amino Acids & Proteins – I: General Biochemical Reaction of Amino Acids Like	219.	Metabolism of Amino Acids and Proteins	--- " ---	ESAG/PD50/108	Madhav Chandra	Payal Naik

	Transamination, Deamination and Decarboxylation Metabolism of Amino Acids & Proteins – II: Metabolism of Sulphur Containing Amino Acids, Urea Cycle, Nitrogen Balance Metabolism of Amino Acids & Proteins – III: Biosynthesis of Bile Salts and Bile Pigments [Metabolism of amino acids and proteins]						
204.	Metabolism of Nucleic Acids – I: Biosynthesis and Catabolism of Purines and Pyrimidines Containing Nucleotides [biosynthesis &catabolism of Nucleic acids, DNA & its Mutation]	220.	biosynthesis &catabolism of Nucleic acids, DNA & its Mutation	--- " ---	ESAG/PD50/122	Madhav Chandra	Amit Page
205.	Metabolism of Nucleic Acids – III: An Introduction to Genetic Engineering, Biosynthesis of RNA, Genetic Code and Protein Synthesis Metabolism of Nucleic Acids – IV: Liver and Kidney Function Tests of Biochemical Importance, Detoxification Mechanisms like Oxidation, Hydrolysis, Reduction and Conjugation [Metabolism of Nucleic acids III + liver test of biochemical importance]	221.	Metabolism of Nucleic acids III	--- " ---	ESAG/PD50/123	Madhav Chandra	Archana Upadhyia
		222.	liver test of biochemical importance	--- " ---	ESAG/PD50/123	Madhav Chandra	Archana Upadhyia
206.	General Pathways of Drug Metabolism: Phase I – (I) Oxidative Reactions, Cytochrome P-450 and Flavin Monooxygenases, Electron Transport Systems	223.	General pathways of drug metabolism, phase i and phase ii	B.Pharm V th Sem [Medicinal Chemistry – I]	ESAG/PD/79	Bhartesh Jain	Nivrati Jain (ADINA, Sagar)

	[General pathways of drug metabolism, phase i and phase ii]						
207.	General Pathways of Drug Metabolism: Phase I – (II) Examples of Xenobiotics, Aromatic Hydroxylation, Alkene Epoxidation, Oxidation of Carbon Adjacent to SP2 Center's [Oxidative Reactions of Various Hydrocarbons]	224.	Oxidative Reactions of Various Hydrocarbons	--- " ---	ESAG/PD/82	Bhartesh Jain	Nivrati Jain (ADINA, Sagar)
208.	General Pathways of Drug Metabolism: Phase I – (III) Oxidation of Aliphatic and Alicyclic Carbon Atoms, Oxidation of Carbon Nitrogen Systems, Oxidation of Carbon Sulphur Systems [Oxidation of aliphatic, alicyclic carbon & carbon hetroatom system]	225.	Oxidation of aliphatic, alicyclic carbon & carbon hetroatom system	--- " ---	ESAG/PD/86	Bhartesh Jain	R. K. Agarwal
209.	General Pathways of Drug Metabolism: Phase I – (IV) Oxidation of Halogenated Compounds having Hydrogen (Halothane, Chloroform, Chloramphenicol etc.), Oxidation of Alcohols and Aldehydes [Metabolism Oxidation of halogenated compounds Phase I- (IV)]	226.	Metabolism Oxidation of halogenated compounds Phase I- (IV)	--- " ---	ESAG/PD50/126	Bhartesh Jain	R.K. Agrawal
210.	General Pathways of Drug Metabolism: Phase I – (V) Reductive Reactions, Reduction of Carbonyl Function, Nitro Group, Tertiary Amine	227.	Phase I- Metabolism(V)	--- " ---	ESAG/PD/23/141	Bhartesh Jain	R. K. Agarwal

	Oxides, Reductive Dehalogenation, Hydrolytic Reactions [Phase I- Metabolism(V)]						
211.	Phase II – (I): Glucuronic Acid Conjugation, Sulphate Conjugation, Amino Acid Conjugation Phase II – (II): Glutathione Conjugation, Acetyl & Methyl Conjugation Phase II – (III): Physicochemical & Stereochemical Aspects in Relation to Biological Activity, Drug Receptor Interactions [Phase II-Drug metabolism]	228.	Phase II-Drug metabolism	--- " ---	ESAG/PD50/123	Bhartesh Jain	Ankur Vaidya
212.	General Pathways of Drug Metabolism: Phase II – (IV) Adrenergic Hormones and Drugs Including Biosynthesis, Storage, Release and Metabolism of Catecholamines (Adrenaline, Isoprenaline, Salbutamol, Amphetamine and Naphazoline) [Phase II-(IV) Adrenergic Hormones]	229.	Phase II-(IV) Adrenergic Hormones	--- " ---	ESAG/PD50/126	Bhartesh Jain	Ankur Vaidya
213.	Phase II – (V): Cholinergics and Anticholinesterases Including Biosynthesis, Storage, Release and Metabolism of ACh (Methacholine Chloride, Neostigmine Bromide) [Cholinomimetics]	230.	Cholinomimetics	--- " ---	ESAG/PD50/123	Bhartesh Jain	Ankur Vaidya
214.	General Pathways of Drug Metabolism: Phase II – (VI) Antispasmodic and Antiulcer Drugs (Cyclopentolate, Propantheline Bromide,	231.	Antispasmodics, Antiulcer and antiparkinson Drugs	--- " ---	ESAG/PD50/97	Bhartesh Jain	Ankur Vaidya

	Benzhexol) Antiparkinsonism Drugs (Apomorphine) [Antispasmodics, Antiulcer and antiparkinson Drugs]						
215.	General Pathways of Drug Metabolism: Phase II – (VII) Neuromuscular Blocking Agents (Gallamine Triethiodide, Succinylcholine Chloride) Hypoglycaemic Drugs (Tolbutamide) [Neuromuscular Blockers]	232.	Neuromuscular Blockers	--- " ---	ESAG/PD50/138	Bhartesh Jain	Sandeep Shrivastava
216.	General pathways of drug General Pathways of Drug Metabolism: Phase II – (VIII) Thyroid Hormones and Antithyroid Drugs (L-Thyroxine, Propylthiouracil) [Thyroid hormones and antithyroid drugs]	233.	Thyroid hormones and antithyroid drugs	--- " ---	ESAG/PD50/89	Bhartesh Jain	Awesh Kumar Yadav + Sandeep Shrivastava
217.	General Pathways of Drug Metabolism: Phase II – (IX): Anticoagulants and Haemostatic Agents (Warfarin, Phenindione) Oxytocics (Including Discussion on Ergot Alkaloids also) (Ergometrine) [Anticoagulants, haemostatic agents and oxytocic agents]	234.	Anticoagulants, haemostatic agents and oxytocic agents	--- " ---	ESAG/PD50/116	Bhartesh Jain	Awesh Kumar Yadav Sandeep Shrivastava
218.	General Pathways of Drug Metabolism: Phase II – (X): Antihistamines Including Discussion On Sodium Cromoglycate (Mepyramine, Diphenhydramine, Chlorpheniramine, Promethazine)	235.	ANTI HISTAMINES Phase II – X & XI	--- " ---	ESAG/PD50/97	Bhartesh Jain	Pradip Ganpat Nirbhavne

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219.	General Pharmacology – I Introduction to Pharmacology, Sources of Drugs, Dosage Forms and Different Routes of Administration [General pharmacology– i]	236.	Introduction to Pharmacology (General pharmacology– I)	B.Pharm V th Sem [Pharmacology – I]	ESAG/PD/84	Bhartesh Jain	Ashutosh Pal Jain
220.	General Pharmacology – II: Factors Modifying Drug Action and Dosage Forms, Pharmacodynamics – Different Types of Drug Actions and their Mechanisms. Adverse Drug Reactions [General pharmacology– ii]	237.	General pharmacology– ii	--- " ---	ESAG/PD/23/151	Bhartesh Jain	Gajendra Pratap Choudhary + Ashutosh Pal Jain
221.	Pharmacokinetics – I: Absorption, Distribution, Metabolism and Excretion of Drugs [Pharmacokinetics i]	238.	Pharmacokinetics i	--- " ---	ESAG/PD23/193	Dr. Pankaj Tiwari	Papiya Bigoniya
222.	Pharmacokinetics – III: Bioassays of Drugs and Biological Standardization Discovery and Development of New Drug (Clinical and Pre-Clinical Studies) [General Pharmacokinetics iii (Pharmacokinetics iii a)]	239.	General Pharmacokinetics iii (Pharmacokinetics iii a)	--- " ---	ESAG/PD/76	Dr. Pankaj Tiwari	Papiya Bigoniya
223.	Pharmacokinetics – III: Bioassays of Drugs and Biological Standardization Discovery and Development of New Drug (Clinical and Pre-Clinical Studies) [General Pharmacokinetics iii (Pharmacokinetics iii a)]	240.	Pharmacokinetics-III Introduction (Pharmacokinetics iii b)	--- " ---	ESAG/PD/84	Bhartesh Jain	S. K. Kashaw
224.	Pharmacology of ANS – I: Neurohumoral Transmission,	241.	Pharmacology of ans & parasympathomimetics	----- "	ESAG/PD50/87 A	Bhartesh Jain	Vishal Jain + Nivradi Jain

	Autonomic and Somatic, Parasympathomimetic Pharmacology of ans, [Pharmacology of ans & parasympathomimetics]						
225.	Pharmacology of ANS – I: Parasympatholytics, Sympathomimetics [Parasympatholytics and sympathomimetics]	242.	Parasympatholytics and sympathomimetics	--- " ---	ESAG/PD50/87 A, ESAG/PD50/95	Bhartesh Jain	Vishal Jain + Nivrati Jain
226.	Pharmacology of ANS – II: Adrenergic Receptors and Neuron Blocking Agents, Ganglion Stimulants and Blocking Agents Pharmacology of CNS – I: Neurohumoral Transmission in CNS, General Anesthetics, Alcohol and Disulfuram [Ans ii & cns i]	243.	Ans ii & cns i	--- " ---	ESAG/PD50/109	Bhartesh Jain	Ashutosh Pal Jain
227.	Pharmacology of CNS – II: Sedative and Hypnotics, Antianxiety Agents and Centrally Acting Muscle Agents, Psychopharmacological Agents (Antipsychotics) [Pharmacological of cns ii]	244.	Pharmacological of cns ii	--- " ---	ESAG/PD/172	Bhartesh Jain	G.P.Chaudhary + Ashutosh Pal Jain
228.	Antidepressants, Antimaniacs, Antiepileptic Drugs [Pharmacological of cns ii – a]	245.	Pharmacological of cns ii – a	--- " ---	ESAG/PD50/97	Bhartesh Jain	Vishal Jain + Nivrati Jain
229.	Pharmacology of CNS – III Antidepressants, Antimaniacs, Antiepileptic Drugs [Pharmacological of cns ii – b]	246.	Pharmacological of cns ii – b	--- " ---	ESAG/PD50/109	Dr. Pankaj Tiwari	Vipin Dhote
230.	Pharmacology of CNS – III: Antiepileptic, Antiparkinsonian And Opioid Analgesics [Antidepressant & antimanic	247.	Antidepressant & antimanic drugs	--- " ---	ESAG/PD50/109, ESAG/PD50/116	Dr. Pankaj Tiwari	Vipin Dhote

	drugs]						
231.	Pharmacology of CNS – IV: Drug Addiction and Drug Abuse, Local Anaesthetics, Drug for Neurodegenerative Disorders [Pharmacology of cns–iv]	248.	Pharmacology of cns–iv	--- " ---	ESAG/PD50/87 A	Bhartesh Jain	Suman Jain + Mr. Neetesh K Jain
232.	Volatile Oils – I: Chemistry and Biogenesis of Medicinally Important Monoterpenes, Sesquiterpenes, Diterpenes and Triterpenes Volatile Oils – II: Study of Important Drugs Yielding Essential Oils like Mentha, Coriander, Cinnamon, Cassia, Lemon Peel, Orange Peel [Volatile Oils -Part I& II]	249.	Volatile Oils -Part I	B.Pharm V th Sem [Pharmacognosy and Phytochemistry – III]	ESAG/PD50/90	Bhartesh Jain	M.D. Kharya
		250.	Volatile Oils -Part II	--- " ---	ESAG/PD50/90	Bhartesh Jain	M.D. Kharya
233.	Volatile Oils – III: Cinnamon, Cardamom, Clove, Gaultheria, Eucalyptus, Valerian, Hops, Chenopodium, Sandalwood, Musk [Volatile Oil - Part–III (EPISODE - I) + Volatile Oil - Part–III (EPISODE - II) + Volatile Oil - Part–III (EPISODE - III)]	251.	Volatile Oil - Part–III (EPISODE - I)	--- " ---	ESAG/PD50/90	Bhartesh Jain	M.D. Kharya
		252.	Volatile Oil - Part–III (EPISODE - II)	--- " ---	ESAG/PD50/90	Bhartesh Jain	M.D. Kharya
		253.	Volatile Oil - Part–III (EPISODE - III)	--- " ---	ESAG/PD50/90	Bhartesh Jain	M.D. Kharya
234.	Volatile Oils – IV: Coriander, Fennel, Caraway, Mentha, Spearmint, Thyme, Lemon Grass, Citronella, Palmrosa [Volatile Oil - Part–III (EPISODE - IV)], Volatile Oil - Part–III (EPISODE - V)]	254.	Volatile Oil - Part–III (EPISODE - IV)	--- " ---	ESAG/PD50/90	Bhartesh Jain	M.D. Kharya
		255.	Volatile Oil - Part–III (EPISODE - V)	--- " ---	ESAG/PD50/90	Bhartesh Jain	M.D. Kharya
235.	Resins – I: Classification and Medicinal	256.	Resin and Resin Combinations (Part I)	--- " ---	ESAG/PD50/139	Bhartesh Jain	M.D. Kharya

	Importance and Study of some Important Resin containing Drugs Colophony, Podophyllum, Jalap, Canabis, Capsicum, Myrrh [Resin and Resin Combinations (Part I & ii)]	257.	Resin and Resin Combinations (Part II)	--- " ---	ESAG/PD50/139	Bhartesh Jain	M.D. Kharya
236.	Resins – II: Asafoetida, Balsam of Tolu, Balsam of Peru, Benzoin, Turmeric, Ginger etc. [Resin and Resin Combinations (Part III)]	258.	Resin and Resin Combinations (Part III)	--- " ---	ESAG/PD50/139	Bhartesh Jain	M.D. Kharya
237.	Tannins: Classification, Chemistry, Uses and Medicinal Significance, Important drugs of this Category like Gambir, Black Catechu, Pale Catechu, Myrobalan etc. [Tannis]	259.	Tannis	--- " ---	ESAG/PD/136	Bhartesh Jain	M.D. Kharya
238.	Proteins and Enzymes – I: Sources, Preparation, Identification Test, Chemical Nature and uses of Papain, Pepsin, Pancreatin, Urokinase [Protein & enzyme – 01]	260.	Protein & enzyme – 01	--- " ---	ESAG/PD50/110	Bhartesh Jain	Vimal Kumar + Anuj Modi
239.	Proteins and Enzymes – II: Sources, Preparation, Identification Test, Chemical Nature And Uses of Diastase, Trypsin, Penicillinase, Hyaluronidase [Protein & enzyme – 02]	261.	Protein & enzyme – 02	--- " ---	ESAG/PD/174	Bhartesh Jain	Vimal Kumar
240.	Phytochemical Screening – I: Preparation of Extracts, Phytochemical Tests for Detection of Common Plant Constituents Phytochemical Screening – II:	262.	Phytochemical screening–1	--- " ---	ESAG/PD50/87 A	Bhartesh Jain	G.P.Chaudhary + Ashutosh Pal Jain
		263.	Phytochemical screening–2	--- " ---	ESAG/PD50/87 A	Bhartesh Jain	G.P.Chaudhary + Ashutosh Pal Jain

	Biosynthetic Pathways for Secondary Plant Constituents, General Principles of Formation of Primary and Secondary Plant Metabolites [Phytochemical screening– i & ii]						
241.	Phytochemical Screening – III: Biogenesis of Medicinally Important Glycosides, Alkaloids, Carbohydrates, Lipids, Volatile Oils and Steroids Phytochemical Screening – IV: Radio Tracer Techniques and Their Utilization in Elucidation of Biosynthetic Pathways in Plants [Phytochemical screening– iii & iv]	264.	Phytochemical screening–3	--- " ---	ESAG/PD50/109	Bhartesh Jain	Vimal Kumar + Anuj Modi
		265.	Phytochemical screening–4	--- " ---	ESAG/PD50/109	Bhartesh Jain	Vimal Kumar + Anuj Modi
242.	Quality Control and Standardization – I: Introduction, Classification and Study of Different Chromatography Methods and their Methods and their Applications in Evaluation of Herbal Drugs [Quality control and standardization]	266.	Quality Control and Standardization of herbal medicine	--- " ---	ESAG/PD50/91	Bhartesh Jain	Yashwant Gupta
243.	Isolation of the following Phyto-Constituents (Including Industrial Methods) – I: Morphine, Quinine, Reserpine [Isolation of phyto pharmaceuticals 2]	267.	Isolation of Phyto Pharmaceuticals part-II (part-1)	--- " ---	ESAG/PD/165	Bhartesh Jain	Vinod Dixit
		268.	Isolation of Phyto Pharmaceuticals part-II (part-2)	--- " ---	ESAG/PD/165	Bhartesh Jain	Vinod Dixit
244.	WHO Guidelines for Rational Use of Herbal Drugs Utilization and Production of Phytoconstituents from Aromatic And Medicinal	269.	WHO guide line	--- " ---	ESAG/PD50/90	Bhartesh Jain	Vinod Dixit

	Plants [WHO guide line]						
245.	Isolation of the following Phyto-Constituents – II: Sennosides, Digitalis Glycosides, Diosgenin, Isolation of the following Phyto-Constituents – III: Menthol, Thymol, Rutin, Psoralen [Isolation of phyto pharmaceuticals 1]	270.	Isolation of phyto pharmaceuticals 1	--- " ---	ESAG/PD/167	Bhartesh Jain	Vinod Dixit
246.	Marine Pharmacognosy – I: Study of Novel Agents from Marine Sources Herbal Constituents as Health Foods and Cosmetic Ingredients [Marine pharmacognosy– i – a]	271.	Marine Pharmacognosy-I (Harbs as a healthy food) Part - A	--- " ---	ESAG/PD/168	Bhartesh Jain	Vimal Kumar + Anuj Modi
		272.	Marine Pharmacognosy-I (Harbs as a healthy food) Part - B	--- " ---	ESAG/PD/168	Bhartesh Jain	Vimal Kumar + Anuj Modi
247.	Marine Pharmacognosy – I: Study of Novel Agents from Marine Sources Herbal Constituents as Health Foods and Cosmetic Ingredients [Marine pharmacognosy– i – b]	273.	Marine Pharmacognosy and cosmetic ingredients	--- " ---	ESAG/PD/168	Bhartesh Jain	Vimal Kumar + Anuj Modi
248.	Marine Pharmacognosy – II: Natural Allergens, Herbs Induces Allergy, Poisonous Plants	274.	Natural Allergence and Poisonous Plants =	--- " ---	ESAG/PD23/191	Bhartesh Jain	Vimal Kumar + Anuj Modi
249.	Marine Pharmacognosy – II: Photosensitizing Agents, Fungal and Mushroom Toxins	275.	Photosensitising Agent, Fungal and Mushroom Toxins	--- " ---	ESAG/PD50/335	Bhartesh Jain	Vimal Kumar + Anuj Modi
250.	Marine Pharmacognosy – III: Chemistry and Biogenesis of Medicinally Important Lignans, Quassinoids and Flavonoids. Concept of Synergy in Herbs [Lignans, Quassinoids, Flavonoids	276.	Lignans, Quassinoids, Flavonoids And Synergistic Effects	--- " ---	ESAG/PD50/138	Bhartesh Jain	Vimal Kumar + Anuj Modi

	And Synergistic Effects]						
251.	Concept of Management – I Administrative Management (Planning, Organizing, Staffing, Directing and Controlling), Concept of Management – II Entrepreneurship Development [Concept of management – i]	277.	Concept of Management-I	B.Pharm VI th Sem [Pharmaceutical Industrial Management]	ESAG/PD/83	Bhartesh Jain	Yashwant Gupta
252.	Concept of Management – III Operative Management (Personnel, Materials, Production, Financial, Marketing, Time/Space, Margin/Morale) Concept of Management – IV Principles of Management (Co-ordination, Communication, Motivation, Decision-making, Leadership) [Concept of management – ii]	278.	Concept of Management-II	--- " ---	ESAG/PD/83	Bhartesh Jain	Yashwant Gupta
253.	Concept of Management – V: Principles of Management (Innovation, Creativity, Delegation of Authority / Responsibility, Record Keeping) Concept of Management – VI: Identification of Key Points to Give Maximum Thrust for Development and Perfection [Concept management]	279.	CONCEPT of MANAGEMENT	--- " ---	ESAG/PD/161	Bhartesh Jain	Parul Diwaker
254.	Accountancy – I: Principles of Account, Ledger Posting and Journal Entries, Preparation of Trial Balance, Columns of a Cash Book [Accountancy – 01]	280.	Accountancy – 01	--- " ---	ESAG/PD50/102	Bhartesh Jain	Anurag Jain + Parul Diwaker

255.	Accountancy – II: Bank Reconciliation Statement, Rectification of Errors, Profit and Loss Account, Balance Sheet, Purchase Accountancy – III: Keeping and Pricing of Stocks, Treatment of Cheques, Bills of Exchange, Promissory Notes and Hundies, Documentary Bills [Accountancy – 02]	281.	Accountancy – 02	--- " ---	ESAG/PD50/101	Bhartesh Jain	Anurag Jain + Parul Diwaker
256.	Economics – I: Principles of Economics with Special Reference to The Laws of Demand and Supply, Demand Schedule, Demand Curves [Economics Part -I]	282.	Economics Part -I	--- " ---	ESAG/PD50/102	Bhartesh Jain	Anurag Jain + Parul Diwaker
257.	Economics – II: Labour Welfare, General Principles of Insurance and Inland and Foreign Trade, Procedure of Exporting and Importing Goods [Economics Part -II]	283.	Economics Part -II	--- " ---	ESAG/PD50/106	Bhartesh Jain	Anurag Jain + Parul Diwaker
258.	Planning and Decision Making – I: Definition, Importance of Planning, Steps Involved in Decision Making Planning and Decision Making – II: Objectives, Strategies, Policies and Program, Production Planning and Control Scientific Purchasing, Quality Control, Problems of Productivity [Planning and Decision making]	284.	Planning and Decision making	--- " ---	ESAG/PD50/110	Bhartesh Jain	Yashwant Gupta
259.	Stores Organization, Location of Store, Receiving, Inspection &	285.	Store Management	--- " ---	ESAG/PD50/89	Bhartesh Jain	Yashwant Gupta

	Issue of Materials, Control of Stores and Stocks, Stores Accounting and Records [Store management]						
260.	Personnel Management Selection, Appointment, Training, Transfer, Promotion And Demotion, Remuneration, Job Evaluation, Human Relations [Personnel management]	286.	Personal Management	--- " ---	ESAG/PD50/96	Bhartesh Jain	Yashwant Gupta
261.	Pharmaceutical Marketing and Market Research – I: Functions, Buying, Selling, Transportation, Storage, Finance, Feedback, Information, Pharmaceutical Marketing and Market Research – II: Channels of Distribution, Wholesale, Retail, Departmental Store, Multiple Shop and Mail Order Business [Pharmaceutical marketing and market research– i & ii]	287.	PHARMACEUTICAL MARKETING AND MARKET RESEARCH-I & II	--- " ---	ESAG/PD50/96, ESAG/PD50/109	Bhartesh Jain	Yashwant Gupta
262.	Pharmaceutical Marketing and Market Research – III: Measuring & Forecasting Market Demands, Major Concept in Demand Measurement, Estimating Current Demand Pharmaceutical Marketing and Market Research – IV: Geodemographic Analysis, Estimating Industry Sales, Market Share and Future Demand [Pharmaceutical marketing and market research– iii & iv]	288.	PHARMACEUTICAL MARKETING AND MARKET RESEARCH- III&IV	--- " ---	ESAG/PD50/96	Bhartesh Jain	Yashwant Gupta

263.	Pharmaceutical Marketing And Market Research – IV Market Segmentation and Market Targeting [Pharma marketing & market research]	289.	Pharmaceutical Marketing & Market Research	--- " ---	ESAG/PD50/109	Bhartesh Jain	Yashwant Gupta
264.	Chromatography – I Column Chromatography: Adsorption and Partition Theory, Preparation, Procedure and Methods of Detection Chromatography – II Column Chromatography: Thin Layer Chromatography Theoretical Consideration, Preparation, Procedure and Detection of Compounds [Application and Classification of Chromatography]	290.	Application and Classification of Chromatography	B.Pharm VI th Sem [Pharmaceutical Analysis – II]	ESAG/PD/82	Bhartesh Jain	Ankur Vaidya
265.	Chromatography – III Paper Chromatography: Theory of Partition, Different Techniques Employed and Different Grades of Papers Used Qualitative and Quantitative Detection [Chromatography 3]	291.	Chromatography- III	--- " ---	ESAG/PD50/137	Bhartesh Jain	Ankur Vaidya
266.	Chromatography – IV Gas Chromatography: Introduction, Fundamental of Column Operations and Detection Chromatography –V Ion Exchangers: Types of Exchangers, Mechanism of Ion Exchange and Column Operation [Gas Chromatography and Exchange Chromatography]	292.	Gas Chromatography and Exchange Chromatography.	--- " ---	ESAG/PD/87	Bhartesh Jain	Ankur Vaidya
267.	Chromatography – VI:	293.	Chromatography-VI +	--- " ---	ESAG/PD23/188	Bhartesh Jain	Ankur Vaidya

	Counter Current Extraction, Ultra Centrifugation and Gel Filtration Chromatography – VII: HPLC and HPTLC, Solvent Extraction Methods, Counter Current Distribution Technique [Chromatography 6 and 7]		VII				
268.	Potentiometry – I: Theoretical Consideration, Ion Selective Electrode, Measurement of Potential, Location of End Point Potentiometry – II: Equipment, Analytical Application, Direct Measurements of Metal Concentration, Differential Curves, Determination of KSP [Potentiometry – 01+02]	294.	Potentiometry - I and II	--- " ---	ESAG/PD50/115	Bhartesh Jain	Ankur Vaidya
269.	Potentiometry – III: pH Measurements, Dead Stop Titration, pH Meter, pH Definition, Relation of pH to Potential, Equipment, Application, Conductometric and Hi Frequency Titration and their Application. Coulometric Titrations - its Basic Principles and Application [Potentiometry – 03]	295.	Potentiometry – 03	--- " ---	ESAG/PD50/115	Bhartesh Jain	Suresh Thareja
270.	Non-Aqueous Titrations – I General Discussion and Principle of Titrations in Non-Aqueous Media, Aprotic, Protophilic, Protogenic and Amphiprotic Solvents Non-Aqueous Titrations – II Titrations with Perchloric Acid, Potassium Methoxide and	296.	Non aqueous titration	--- " ---	ESAG/PD/84	Bhartesh Jain	Suresh Thareja

	Tetrabutyl Ammonium Hydroxide [Non aqueous titration]						
271.	Complexometry: Principles of Complexometric Titrations, Chelating Agent, Indicators, Titrations with Disodium Edentate. Titrations using Sodium Nitrite, Estimation of Nitrogen Content by Kjeldahl's Method, Moisture Content Determination by Karl-Fischer Titration [Complexometry]	297.	Complexometry	--- " ---	ESAG/PD50/130	Bhartesh Jain	Suresh Thareja
272.	Steroids – II: Simple Reactions of Diosgenin, Solasodine, Bile Acids, Biosynthesis of Testosterone, 17 Estradiol, Aldosterone from Cholesterol [Steroids ii]	298.	Steroids ii	B.Pharm VI th Sem [Medicinal Chemistry-II]	ESAG/PD50/88	Bhartesh Jain	Vivek Kumar Vyas + Manjuanth Ghate
273.	Steroids – IV: Progestational Agents: Synthesis of Progesterone from Diosgenin and Stigmasterol, Ethisterone from Dehydroepiandrosterone, Oral Contraceptives, SAR of Progestine [Steroids– iv]	299.	Steroids– iv	--- " ---	ESAG/PD/205	Dr. Pankaj Tiwari	Mr Jinitkumar Gawad
274.	Steroids – V: Androgens and Anabolic Agents, Synthesis of Testosterone from Diosgenin, Methyltestosterone from Dehydroepiandrosterone [Steroids – v]	300.	Steroids – v	--- " ---	ESAG/PD50/88	Bhartesh Jain	Vivek Kumar Vyas + Manjuanth Ghate
275.	Steroids – VI: Methandienone from Methyl	301.	Steroids – vi	--- " ---	ESAG/PD50/89	Bhartesh Jain	Hardik G. Bhatt

	Testosterone, Stanozolol from Testosterone [Steroids – vi]						
276.	Steroids – VII: Aderenocorticoids: Glucocorticoids, Mineralocorticoids, Modifications in Structure of Hydrocortisone, SAR Among Glucocorticoids [Steroids– vii]	302.	Steroids– vii	--- " ---	ESAG/PD/205	Dr. Pankaj Tiwari	Mr Jinitkumar Gawad
277.	General Anaesthetic Agents – I: Introduction, Medicinal Aspects of Anaesthetics, Mode of Action, Gases and Volatile Liquid Anaesthetics, General Anaesthetic Agents – II: Intravenous Anaesthetics of Fixed Anaesthetics, Toxicity of General Anaesthetics (Divinyl Ether, Ethyl Chloride, Cyclopropane, Thiopentone Sodium, Ketamine) [General anesthetic agents]	303.	General anesthetic agents	--- " ---	ESAG/PD50/101	Bhartesh Jain	Palak K. Parikh + Prof. Manjunath Ghate
278.	Sedatives Hypnotics – IV: Introduction to Sedative hypnotics, Mode of Action, Pharmacological Properties and Side Effects (Pentobarbitone Sodium, Thiopentone Sodium), Non- Barbiturates (Official Drugs) [Sedative hypnotics]	304.	Sedative hypnotics	--- " ---	ESAG/PD50/121	Bhartesh Jain	Vijay Mishra
279.	Anticonvulsants – I: Introduction, Classification of Epilepsy, SAR, Barbiturates (Official Drugs), Hydantoins, Oxazolidinediones,	305.	Anticonvulsants Part- I & II	--- " ---	ESAG/PD/155	Bhartesh Jain	Vijay Mishra

	Anticonvulsants – II: Succinamides, Miscellaneous Drugs, Phenytoin Sodium, Troxidone [Anticonvulsants i & ii]						
280.	Opioid Analgesics: Morphine and Related Drugs, Synthetic Modifications of Morphine, Codeine, Thebaine Totally Synthetic Analgesics – I Morphinans (N Methylmorphinan And 3 Hydroxy N Methylmorphinan), 6, 7 – Benzomorphans [Opioid analgesics]	306.	Opioid Analgesics	--- " ---	ESAG/PD50/108	Bhartesh Jain	R. L. Tiwari
281.	Totally Synthetic Analgesics – II: 4 Phenylpiperidines (Pethidine, Methadone and Isomethadone), Endogenous Opioid Peptides, Opioid Antagonists (Nalorphine) [Total synthetic analgesic ii]	307.	Totally synthetic analgesics-II	--- " ---	ESAG/PD23/185	Bhartesh Jain	R. L. Tiwari
282.	Antitussives: Centrally Acting Antitussives, Opium Alkaloids and their Modifications, Synthetic Antitussives, Peripherally Acting Antitussives, Expectorants [Antitussive agents]	308.	Antitussive agents	--- " ---	ESAG/PD50/116	Bhartesh Jain	Sunil K. Jain
283.	CNS Stimulants: CNS Stimulants of Natural Origin, Synthetic CNS Stimulants [Nikethamide, Methylxanthines and Modified Methylxanthines (Theophylline)] [CNS stimulants]	309.	CNS stimulants	--- " ---	ESAG/PD50/98	Bhartesh Jain	Karuna Thete
284.	Psychopharmacological Agents – I Antipsychotics, Phenothiazines	310.	Psychopharmacological agent– i	--- " ---	ESAG/PD50/112	Bhartesh Jain	Palak K. Parikh + Prof. Manjunath

	(Chlorpromazine, Trifluoperazine, Butyrophenones, Miscellaneous), Antidepressants: TCA (Amitriptyline) [Psychopharmacological agent– i]						Ghate
285.	Psychopharmacological agents – II: MAO Inhibitors, Atypical Antidepressants, Antianxiety Drugs- Meprobamate and Related Drugs, Benzodiazepines (Diazepam) [Psychopharmacological agent– ii]	311.	Psychopharmacological agent– ii	--- " ---	ESAG/PD50/88	Bhartesh Jain	Palak K. Parikh + Prof. Manjunath Ghate
286.	Hallucinogens: Hallucinogenic Agents Related to Indoles, Phenethylamines, Cannabinoids [Hallucinogens]	312.	Hallucinogens	--- " ---	ESAG/PD50/93	Bhartesh Jain	Karuna Thete
287.	Diuretics – I Carbonic Anhydrase Inhibitors (Acetazolamide and Dichlorphenamide), Thiazides and Related Drugs (Bendroflumazide) Diuretics – II (High Ceiling Diuretics, Aldosterone Antagonists, Other Potassium Sparing Diuretics, Osmotic Diuretics) [Diuretics in medicinal chemistry – iii]	313.	Diuretics in medicinal chemistry – iii	--- " ---	ESAG/PD50/101	Bhartesh Jain	Pradeep Nirbhavne
288.	CVS Agents – I: Introduction, Cardiac Glycosides, SAR, Mechanism of Action, Toxic Effects CVS Agents – II: Antihypertensive Agents- Introduction, Etiology, Ganglion Blocking Agents, Antiadrenergic	314.	CVS agent i and CVS agents ii	--- " ---	ESAG/PD50/116	Bhartesh Jain	Malti Dubey

	Agents, Drugs Acting Directly on Smooth Muscles, Drugs Acting in CNS (Propranolol) [CVS agent i and CVS agents ii]						
289.	CVS agents – III Antianginals and Vasodilators: Introduction, Mechanism of Smooth Muscle Vasodilatation, Esters of Nitrous and Nitric Acid, Side Effects (Nitroglycetine) [Anti– anginals and vasodilators]	315.	Anti– anginals and vasodilators	--- " ---	ESAG/PD50/116	Bhartesh Jain	Jignasa K. Savjani
290.	CVS agents – IV: Antiarrhythmic and Antifibrillic Drugs Classification of Antiarrhythmic Drugs, Mechanism of Action, Side Effects, Antilipemic Drugs [anti-arrhythmic, anti-fibrinolytic drugs and anti-hyperlipidemic drugs]	316.	anti-arrhythmic, anti-fibrinolytic drugs and anti-hyperlipidemic drugs	--- " ---	ESAG/PD50/116	Bhartesh Jain	Jignasa K. Savjani
291.	Pharmacology of Cardiovascular Systems – I: Digitalis and Cardiac Glycosides Pharmacology of Cardiovascular Systems – II: Antihypertensive Drugs Pharmacology of Cardiovascular Systems – III: Antianginal and Vasodilator Drugs, Including Calcium Channel Blockers and Beta Adrenergic Antagonists [Pharmacology of Cardiovascular System]	317.	Pharmacology of Cardiovascular System	B.Pharm VI th Sem [Pharmacology-II]	ESAG/PD50/109	Bhartesh Jain	Suman Jain
292.	Pharmacology of Cardiovascular Systems – IV: Antiarrhythmic Drugs Pharmacology of Cardiovascular	318.	Pharmacology of Cardiovascular System	--- " ---	ESAG/PD/208	Bhartesh Jain	Neetesh K Jain

	Systems – V: Antihyperlipidemic Drugs Pharmacology of Cardiovascular Systems – VI: Drugs Used in Therapy of Shock [Pharmacology of Cardiovascular System]						
293.	Drugs Acting on Hemopoetic Systems – I: Hematinics, Anticoagulants, Vitamin K and Haemostatic Agents Drugs Acting on Hemopoetic Systems – II: Fibrinolytic and Antiplatelet Drugs, Blood and Plasma Volume Expanders [Drugs Acting on Hemopoetic System-I & II]	319.	Drugs Acting on Hemopoetic System-I & II	--- " ---	ESAG/PD50/105	Bhartesh Jain	S. K. Kashaw
294.	Drugs Acting on Urinary System: a) Fluid and Electrolyte Balance b) Diuretics [Drugs Acting on Urinary System]	320.	Drugs Acting on Urinary System	--- " ---	ESAG/PD50/105	Bhartesh Jain	Rupesh K. Gautam
295.	Autacoids – I: Histamine, 5-HT and their Antagonists Autacoids – II: Prostaglandins, Thromboxanes and Leukotrienes Autacoids – III: Pentagastrins, Cholecystokinin, Angiotensin, Bradykinin and Substance P [Pharmacology-II: Autocoids]	321.	Pharmacology-II: Autocoids	--- " ---	ESAG/PD/172	Bhartesh Jain	Neetesh Kumar Jain
296.	Drugs Acting on Respiratory System – I: Antiasthmatic Drugs Including	322.	Drugs acting on respiratory system-I -2	--- " ---	ESAG/PD/77	Bhartesh Jain	S. K. Kashaw

	Bronchodilators Drugs Acting on Respiratory System – II: Antitussive and Expectorant, Respiratory Stimulants [Drugs acting on respiratory system-I -2]						
297.	Liquid Dosages Forms – I: Introduction, Type, Additives Used in Formulations, Vehicles, Stabilizers, Preservatives [Liquid dosages forms – 01]	323.	Liquid dosages forms – 01	B.Pharm VI th Sem [Pharmaceutical Manufacturing Technology]	ESAG/PD50/107	Dr. Pankaj Tiwari	Shikha Agrawal
298.	Liquid Dosages Forms – II: Suspending Agents, Emulsifying Agents, Solubilizers, Colours, Flavours [Liquid dosages forms – 02]	324.	Liquid dosages forms – 02	--- " ---	ESAG/PD50/107	Dr. Pankaj Tiwari	Shikha Agrawal
299.	Liquid Dosages Forms – III: Manufacturing, Packaging and Evaluation of Clear Liquids, Suspensions and Emulsions Official in IP [Liquid dosages forms – 03]	325.	Liquid dosages forms – 03	--- " ---	ESAG/PD50/107	Dr. Pankaj Tiwari	Shikha Agrawal
300.	Semisolid Dosage Forms – I: Definitions, Types, Mechanism of Drug Penetration Through Skin, Factors Influencing Penetration [Semisolid dosage forms i]	326.	Semisolid dosage forms i	--- " ---	ESAG/PD50/110	Bhartesh Jain	Dinesh Kumar Mishra
301.	Semisolid Dosage Forms – II: Semisolid Bases and their Selection, General Formulation of Semisolids, Manufacturing Procedure, Evaluation and Packaging [Semisolid dosage forms ii]	327.	Semisolid dosage forms ii	--- " ---	ESAG/PD50/130	Bhartesh Jain	Dinesh Kumar Mishra

302.	Tablets – I Formulation of Different Types of Tablets, Granulation Methods, Technology of Production of Granules on Large Scale by Various Techniques [Tablets (01)]	328.	Tablets (01)	--- " ---	ESAG/PD/77	Bhartesh Jain	Parul Diwaker
303.	Tablets-II Physics of Tablets Making, Tablets Compression Machinery of Different Types and the Equipments Employed, Evaluation of Tablets [Tablets (02)]	329.	Tablets (02)	--- " ---	ESAG/PD/79	Bhartesh Jain	Parul Diwaker
304.	Tablets – III: Coating of Tablets: Types of Coating, Film Forming Materials, Formulation of Coating Solution, Equipments for Coating, Coating Process Evaluation of Coated Tablets [Tablets (03)]	330.	Tablets (03)	--- " ---	ESAG/PD50/111	Bhartesh Jain	N. K. Jain
305.	Capsules – I: Advantage and Disadvantages of Capsule Dosage Form, Material for Production of Hard Gelatin Capsules, Size of Capsules [Capsules– i]	331.	Capsules– i	--- " ---	ESAG/PD50/134	Bhartesh Jain	N. K. Jain
306.	Capsules – II: Methods of Capsule Production, Soft Gelatin Capsule Shell and Capsule Content, Importance of Base Absorption and minim/gm Factors in Soft Capsules Capsules – III: Quality Control, Stability Testing and Storage of Capsule Dosage Forms [Capsules– ii + iii]	332.	Capsules– ii + iii	--- " ---	ESAG/PD50/134	Bhartesh Jain	N. K. Jain

307.	Ophthalmic Preparations: Requirements, Formulation, Methods of Preparation, Containers, Evaluation [Ophthalmic preparations]	333.	Ophthalmic preparations	--- " ---	ESAG/PD/131	Bhartesh Jain	N. K. Jain
308.	Pharmaceutical Aerosols – I: Definition, Propellants, General Formulation and Manufacturing [Pharmaceutical aerosols– i]	334.	Pharmaceutical aerosols– i	--- " ---	ESAG/PD/23/153	Bhartesh Jain	Dinesh Kumar Mishra
309.	Pharmaceutical Aerosols – II: Packaging and Evaluation Methods, Pharmaceutical Applications [Pharmaceutical aerosols– ii]	335.	Pharmaceutical aerosols– ii	--- " ---	ESAG/PD23/187	Bhartesh Jain	Dinesh Kumar Mishra
310.	Packaging of Pharmaceutical Products –I: Packaging Components, Types of Specifications and Methods of Evaluation, Stability Aspects of Packaging and Packaging Equipments [Packaging of pharma product i]	336.	Packaging of pharma product i	--- " ---	ESAG/PD23/191	Bhartesh Jain	Dinesh Kumar Mishra
311.	Packaging of Pharmaceutical Products –II: Factors Influencing Choice of Container, Legal and Other Official Requirements for Containers, Package Testing [Packaging of pharma product ii]	337.	Packaging of pharma product ii	--- " ---	ESAG/PD50/95	Bhartesh Jain	N.K.Jain
312.	Parenteral Products – I: Preformulation Factors, Routes of Administration, Water for Injection, Pyrogenicity, Non-Aqueous Vehicles [Parenteral products– i]	338.	Parenteral products– i	--- " ---	ESAG/PD/131	Bhartesh Jain	Dinesh Kumar Mishra

313.	Parenteral Products – II: Isotonicity and Methods of its Adjustment, Formulation Details, Containers and Closures and Selection [Parenteral products– ii]	339.	Parenteral products– ii	--- " ---	ESAG/PD/131	Bhartesh Jain	Dinesh Kumar Mishra
314.	Parenteral Products – III: Prefilling Treatment, Washing of Containers and Closures, Preparation of Solution and Suspensions, Filling and Closing of Ampoules, Vials, Infusion Fluids [Parenteral products– iii]	340.	Parenteral products– iii	--- " ---	ESAG/PD/131	Bhartesh Jain	Dinesh Kumar Mishra
315.	Parenteral Products – IV: Lyophilization & Preparation of Sterile Powders, Equipment for Large Scale Manufacture and Evaluation of Parenteral Products, Sterility Testing of Pharmaceuticals [Parenteral products– iv]	341.	Parenteral products– iv	--- " ---	ESAG/PD23/192	Bhartesh Jain	Dinesh Kumar Mishra
316.	Parenteral Products – V: Aseptic Techniques-Source of Contamination and Methods of Prevention, Design of Aseptic Area, Laminar Flow Bench Services and Maintenance [Parenteral products– v]	342.	Parenteral products– v	--- " ---	ESAG/PD50/95	Bhartesh Jain	Khushwant S. Yadav
317.	Pilot Plant Scale Up Techniques (Pilot plant scale up techniques)	343.	Pilot plant scale up techniques - 1	--- " ---	ESAG/PD/75	Bhartesh Jain	Vandana Soni
		344.	Pilot plant scale up techniques -2	--- " ---	ESAG/PD/75	Bhartesh Jain	Vandana Soni
318.	Pilot plant scale up techniques	345.	Pilot plant scale up techniques	--- " ---	ESAG/PD50/112	Bhartesh Jain	Khushwant S. Yadav
319.	Principles of Drug Design – I: Traditional Analogue, Quantitative	346.	Principle of drug design 1,2&3	B.Pharm VII th Sem [Medicinal	ESAG/PD/23/141	Bhartesh Jain	Ankur Vaidya

	Structure Activity Relationship (QSAR) and Mechanism Based Approaches. Principles of Drug Design – II: A Brief Introduction to Graph Theory, Application of Mechanism Based Approaches, Application of Quantum Mechanics, Principles of Drug Design – III: Computer Aided Drug Designing (CADD) And Molecular Modelling, Introduction to QSAR [Principle of drug design 1,2&3]			Chemistry-III]			
320.	Prodrug Design-I: Vitamins Excluding Detailed Study of Constitution, Metabolite Antagonism: Basic Concepts, Active Site Directed Irreversible Enzyme Inhibitors, Mechanism Based Enzyme Inhibitors [Prodrug design (enzyme inhibition)]	347.	Prodrug Design 1 (Enzyme Inhibition)	--- " ---	ESAG/PD50/88	Bhartesh Jain	Ankur Vaidya
321.	Prodrug Design – II: Metabolite Antagonism Dihydrofolate Synthetase Inhibitors, Dihydrofolate Reductase Inhibitors, Amino Acid Antagonists, Antagonists Directed Against Nucleic Acids, Lactamase Inhibitors [Antimetabolite DHFR]	348.	Anti Metabolite DHFR , Amino acid antagonism	--- " ---	ESAG/PD23/186	Bhartesh Jain	Ankur Vaidya
322.	Sulphonamides – I: Development, Nomenclature and Classification, Antimicrobial	349.	Sulfonamide i	--- " ---	ESAG/PD50/89	Bhartesh Jain	Bhumika D.Patel + Manjuanth Ghat

	Spectrum, Drug Resistance [Sulfonamide i]						
323.	Sulphonamides – II: Synergism with Dihydrofolate Reductase Inhibitors, Toxicity and Side Effects, Reduction of Crystal Urea, Physicochemical Properties and Biological Activity [Sulfonamide ii]	350.	Sulfonamide ii	--- " ---	ESAG/PD50/89	Bhartesh Jain	Bhumika D.Patel + Manjuanth Ghate
324.	Sulphonamides – III: Protein Binding and Distribution, Metabolism, Sulphonamides and Trimethoprim Combination, Synthesis of (Sulphanilamide, Sulphacetamide, Sulphadiazine) Sulphonamides – IV: Synthesis of Sulphamethazole and Sulphamethoxazole [Sulfonamide iii + iv]	351.	Sulfonamide iii + iv	--- " ---	ESAG/PD50/89	Bhartesh Jain	Hardik G. Bhatt
325.	Antibiotics – I: Classification, Cycloserine, Chloramphenicol, Penicillins [Antibiotics – I]	352.	Antibiotics – I	--- " ---	ESAG/PD50/116	Bhartesh Jain	Kapil Jain + Pradeep Nirbhavne
326.	Antibiotics – II: Cephalosporins, Aminoglycosides, Tetracyclines, Polypeptides (Chloramphenicol) [Antibiotics – II]	353.	Antibiotics – II	--- " ---	ESAG/PD50/102	Bhartesh Jain	Rajesh Mandal
327.	Antimycobacterial Agents – I: Introduction to Mycobacterium, Development of Antimycobacterium Agents and their use in Therapeutics Antimycobacterial Agents – II: Synthesis of (Dapsone, Sulfoxone	354.	Anti– mycobacterial agents– i– ii– iii	--- " ---	ESAG/PD/155	Sunil Kumar	Varsha Kashaw

	Sodium, Solapsone, Isonicotinic Acid) Antimycobacterial Agents – III: Synthesis of Hydrazide, Para Aminosalicylic Acid, Pyrazinamide and Ethionamide [Anti– mycobacterial agents– i– ii– iii]						
328.	Antimalarials – I: Quinoline and Analogues, 8- Amino Quinolines, 9- Amino Acridines, 4- Amino Quinolines Antimalarials – II: Diamino Pyrimidine, Biguanides (Primaquin, Mepacrine, Chloroquin, Pyrimethamine) [Antimalarials]	355.	Antimalarials (Introduction)	--- " ---	ESAG/PD/82	Sunil Kumar	S. K. Kashaw
329.	Antiamoebic Agents – I: Emetine Hydrochloride, Quinoline Derivatives, Metal Free Substances, Diloxanide Furoate Antiamoebic Agents – II: Metronidazole, Organometallic Compounds, Acetarsol (Diodohydroxyquinoline, Diloxanide) Drugs Used for Trypanosomiasis and Other Protozoal Diseases [Antiamoebic agents- Explaining agricultural concepts]	356.	Antiamoebic agents- Explaining agricultural concepts	--- " ---	ESAG/PD50/137	Sunil Kumar	Varsha Kashaw
330.	Anthelmintics – I: Drugs Used in Cestide Infections, Drugs Used in Trematode Infections, Drugs for Intestinal Nematode Infections, Anthelmintics – II:	357.	Anthelmintic	--- " ---	ESAG/PD/178	Sunil Kumar	Varsha Kashaw

	Antifilarial Agents: (Niclosamide, Hexylresorcinol, Diethylcarbamazine Citrate, Thiabendazole) [Anthelmintic]						
331.	Antifungal Agents – I: Antibiotics, Griseofulvin, Amphotericin, Candicidine, Nystatin, Antifungal Agents – II: Synthetic Antifungal Agents, Salicyclic Acid, Miconazole Elcomazole, Tolanflate, Flucotosine, Dithranol and Chlorphenesin [Antifungal agents I-II]	358.	Antifungal agents I-II	--- " ---	ESAG/PD50/97	Sunil Kumar	Varsha Kashaw
332.	Urinary Antiseptics: Quinolones, Nalidixic Acid, Nitrofurantion Disinfectants And Antiseptics [Urinary antisept]	359.	Urinary antisept	--- " ---	ESAG/PD50/91	Sunil Kumar	Varsha Kashaw
333.	Antineoplastic Agent – I: Introduction, Characteristic of Cancer Cell, Cell Growth Cycle, Causes of Cancer, Thiotepa, Chlorambucil Antineoplastic Agent – II: Antimetabolites, 6-Thioguanine, Methotrexate, 6-Mercaptopurine, Cytarabine, 5-Flurouracil and Dacarbazine [Antineoplastic agents 1 + 2]	360.	Antineoplastic agents 1 + 2	--- " ---	ESAG/PD23/187	Sunil Kumar	S. K. Kashaw
334.	Antineoplastic Agent – III: Alkylating Agents, Mechlorethamine, Melphalan, Busulphan, Mitomycin, Cisplatin	361.	Antineoplastic agents 3 + 4	--- " ---	ESAG/PD/156	Sunil Kumar	S. K. Kashaw

	Antineoplastic Agent – IV: Alkylating Agent Carmustine, Lomustine, Cyclophosphamide, DNA Intercalating Agents, Doxorubicin, Daunorubicin, Mitoxantrine [Antineoplastic agents 3 + 4]						
335.	Antineoplastic Agent – V: Antibiotics, Dactinomycin, Bleomycin, Mithramycin, Anthramycin Antineoplastic Agent – VI: Antimitotic Agents, Vincristine, Vinblastine, Miscellaneous Agents, Procarbazine, Asparaginase, Interferones, Hydroxyurea [Antineoplastic agents 5 + 6]	362.	Antineoplastic agents 5 + 6	--- " ---	ESAG/PD50/133	Sunil Kumar	S. K. Kashaw
336.	Antiviral Agents – I: Introduction To DNA, RNA and Retroviruses, Viral Replication, Antiviral Agents – II: Amantidine Hydrochloride, Interferones, Acyclovir, Idoxuridine, Trifluorothymidine, Antiviral Agents – III: Vidarabine, Cytarabine, Ribavirin, Methisazone, Zidovudine, Diagnostic Agents [Antiviral agents– i, ii, iii]	363.	Antiviral agents– i, ii, iii	--- " ---	ESAG/PD/157	Sunil Kumar	Vijay Kumar Singh
337.	Electromagnetic Radiations – I: Nature of Electromagnetic Radiations, the Interaction Between Energy and Matter, Applications of Quantum Mechanics Theory [Electromagnetic radiations– i]	364.	Electromagnetic radiations– i	B.Pharm VII th Sem [Pharmaceutical Analysis – III]	ESAG/PD/179	Sunil Kumar	Chanchal Deep Kaur & Bina Gidwani

338.	Electromagnetic Radiations – II: The Absorption of Energy by Atoms and Molecules, The Emission of Radiant Energy by Atom and Molecules, Refraction and Diffraction [Electromagnetic radiations– ii]	365.	Electromagnetic radiations– ii	--- " ---	ESAG/PD/179	Sunil Kumar	Chanchal Deep Kaur & Bina Gidwani
339.	Ultraviolet & Visible Spectrophotometry – I: Electronic Excitation, Quantitative Laws, Deviation from Beers Law, Graphical Presentation of Data, Chromophores, Photometric Errors [Ultraviolet and visible spectrophotometry– i]	366.	Ultraviolet and visible spectrophotometry– i	--- " ---	ESAG/PD50/125	Sunil Kumar	Chanchal Deep Kaur
340.	Ultraviolet & Visible Spectrophotometry – II: Instrumentation (Light Sources, Prism, & Grating, Monochromators, Photoemissive & Photomultipliers Tubes), Single & Double Beam Instruments [Ultraviolet and visible spectrophotometry– ii]	367.	Ultraviolet and visible spectrophotometry– ii	--- " ---	ESAG/PD50/125	Sunil Kumar	Chanchal Deep Kaur
341.	Ultraviolet and Visible Spectrophotometry-III: Steps in Spectrophotometric Measurements (Sample Handling; Amplification and Radiation of Detectors, Selection of Wavelengths & Bandwidth) Ultraviolet and Visible Spectrophotometry-IV: Concentration and Optimum	368.	Ultraviolet and visible spectrophotometry– iii + iv	--- " ---	ESAG/PD50/91	Sunil Kumar	Bina Gidwani

	Absorbance Value, Applications (Direct & Indirect Methods, Analysis Of Mixture) [Ultraviolet and visible spectrophotometry– iii + iv]						
342.	Fluorimetric Analysis – I: Theory, Quantitative Description, Experimental Factors Effecting Fluorescence Intensity, Factors Effecting IO and F Directly Fluorimetric Analysis – II: Relationship of Fluorescence to Molecular Structure, Instrumentation (Cells, Light Sources, Wavelength Selection, Detectors), Correction of Spectra, Pharmaceutical Applications [Fluorimetry]	369.	Fluorimetry	--- " ---	ESAG/PD/23/145	Sunil Kumar	Varsha Kashaw
343.	Flame Photometry – I: Origin of Spectra, Atomization and Ionization Instrumentation (Nebulizer, Mirrors, Burners, Slits, Monochromators and Detectors) Flame Photometry – II: Background Emission, Interferences, Qualitative Applications in Pharmaceutical Analysis [Flame photometry – I]	370.	Flame photometry – I	--- " ---	ESAG/PD50/132	Sunil Kumar	Shiv Shankar Shukla
344.	Atomic Absorption Spectroscopy: Theory of Absorption of Radiant Energy by Atoms, Equipment, Analytical Applications [ATOMIC ABSORPTION	371.	ATOMIC ABSORPTION SPECTROSCOPY	--- " ---	ESAG/PD50/102	Sunil Kumar	Varsha Kashaw

	SPECTROSCOPY]						
345.	IR Spectrophotometry – I: Theory, Characteristics, Absorption Bands of Organic Functional Group, Interpretation of IR Absorption Spectra [IR spectrophotometry – 01]	372.	IR spectrophotometry – 01	--- " ---	ESAG/PD50/106	Sunil Kumar	Varsha Kashaw
346.	IR Spectrophotometry – II: Frequency Range, Band Width, Scan Speed, Concentration Range and Absorbance Value, Preparation of Samples, Sample Cell [IR spectrophotometry – 02]	373.	IR spectrophotometry – 02	--- " ---	ESAG/PD50/107	Sunil Kumar	Varsha Kashaw
347.	IR spectrophotometry – III: IR Instrumentation (Light Source, Monochromator Detectors) Qualitative and Quantitative Application in Pharmaceutical Analysis, Analytical Shortcomings [IR spectrophotometry – 03]	374.	IR spectrophotometry – 03	--- " ---	ESAG/PD50/94	Sunil Kumar	Varsha Kashaw
348.	X Ray-Spectrometry – I: An Introduction to the Theory of X Ray Spectroscopy (Miller, Space Lattice and Unit Cell, Bravais Lattices) Interplaner Spacing in Crystal System [X ray– spectrometry –i]	375.	X ray– spectrometry –i	--- " ---	ESAG/PD/171	Sunil Kumar	Shiv Shankar Shukla
349.	X Ray-Spectrometry – II: Diffraction of X -Ray by Crystal, Bragg Equation, Powder Method, X- Ray Diffraction Pattern of Cubic System (NaCl), Application on Pharmaceutical Analysis	376.	X ray– spectrometry –ii	--- " ---	ESAG/PD/171	Sunil Kumar	Shiv Shankar Shukla

	[X ray– spectrometry –ii]						
350.	Mass Spectrometry – I: Instrumentation, Basic Principles Determination of Molecular Formula Mass Spectrometry – II: Recognition of Molecular Ion Peak, Fragmentation, Mass Spectra of Simple Compounds [Saturated Hydrocarbon] [Mass spectrometry]	377.	Mass spectrometry- I & II-Part 1	--- " ---	ESAG/PD23/189	Sunil Kumar	Chanchal Deep Kaur & Bina Gidwani
		378.	Mass spectrometry- I & II-Part 2	--- " ---	ESAG/PD23/189	Sunil Kumar	Chanchal Deep Kaur & Bina Gidwani
351.	Polarography and its Application – I: Theory, Mass Transport Processes, Current Potential Relationship, Polarization, Choice of Electrodes, Polarography and its Application – II: Instrumentation, Effect of Oxygen, Calculation of Concentration, Laboratory Design and Safety [Polarography and its applications]	379.	Polarography and its applications - I	--- " ---	ESAG/PD50/91	Sunil Kumar	Chanchal Deep Kaur & Bina Gidwani
352.	Use of Electrophoresis Method in Drug Analysis, Amperometric Titration and its Application [Use of electrophoresis method in drug analysis]	380.	USE OF ELECTROPHORESIS METHOD IN DRUG ANALYSIS	--- " ---	ESAG/PD50/126	Sunil Kumar	Chanchal Deep Kaur & Bina Gidwani
353.	Drugs Acting on the Gastrointestinal Tract – I: Antacids, Antisecretory and Anti- Ulcers Drugs [Antacids]	381.	Drugs acting on the Gastrointestinal Tract-I (Antacids, antisecretory and anti- ulcers drugs)	B.Pharm VII th Sem [Pharmacology – III]	ESAG/PD50/105	Sunil Kumar	Nitin Nema
354.	Drugs Acting on the Gastrointestinal Tract – II:	382.	Laxatives,	--- " ---	ESAG/PD/83	Sunil Kumar	Nitin Nema

	Laxatives [Laxatives]						
355.	Drugs Acting on the Gastrointestinal Tract – II: Anti-Diarrheal Drugs	383.	Drugs acting on the Gastrointestinal Tract- II (antidiarrhoeal drugs)	--- " ---	ESAG/PD50/105	Sunil Kumar	Nitin Nema
356.	Drugs Acting on the Gastrointestinal Tract – III: Appetite and Suppressants [Appetite stimulants]	384.	Appetite stimulants	--- " ---	ESAG/PD/83	Sunil Kumar	Nitin Nema
357.	Drugs Acting on the Gastrointestinal Tract – III: Emetics and Anti-Emetics [Introduction to Emetic and antiemetic]	385.	Introduction to Emetic and antiemetic	--- " ---	ESAG/PD/83	Sunil Kumar	Nitin Nema
358.	Drugs Acting on the Gastrointestinal Tract – III: Appetite Suppressants [Appetite suppressants]	386.	Appetite suppressants	--- " ---	ESAG/PD50/102	Sunil Kumar	Nitin Nema
359.	Pharmacology of Endocrine System – I: Hypothalamic and Pituitary Hormones [Hypothalamic and Pituitary Hormones Part - 1 & 2]	387.	Hypothalamic and Pituitary Hormones Part - 1	--- " ---	ESAG/PD50/93	Sunil Kumar	Nitin Nema
		388.	Hypothalamic and Pituitary Hormones Part - 2	--- " ---	ESAG/PD50/94	Sunil Kumar	Nitin Nema
360.	Pharmacology of Endocrine System – II: Thyroid Hormones and Anti Thyroid Drugs, Parathormone, Calcitonin and Vitamin D [Thyroid and anti– thyroid drugs]	389.	Thyroid and anti– thyroid drugs	--- " ---	ESAG/PD50/89	Sunil Kumar	Nitin Nema
361.	Pharmacology of Endocrine System – III, IV & V: Insulin, Oral Hypoglycaemic Agents and Glucagons, ACTH and Corticosteroids,	390.	Pharmacology of endocrine system,	--- " ---	ESAG/PD50/124	Sunil Kumar	Trilochan Satapathy

	Androgens and Anabolic Steroids, Estrogen, Progesterone and Oral Contraceptive, Drugs Acting on the Uterus [Pharmacology of endocrine system]						
362.	Pharmacology of Endocrine System – III: Oral Hypoglycaemic Agents [Oral Hypoglycemic Agents]	391.	Oral Hypoglycemic agents	--- " ---	ESAG/PD/23/146	Sunil Kumar	Sandeep Shrivastava
363.	Chemotherapy – III: Chemotherapy of Tuberculosis and Leprosy [Chemotherapy of TB]	392.	Chemotherapy of TB - 1	--- " ---	ESAG/PD/75	Sunil Kumar	S. K. Kashaw
		393.	Chemotherapy of TB - 2	--- " ---	ESAG/PD/75	Sunil Kumar	S. K. Kashaw
364.	Chemotherapy – III: Chemotherapy of Fungal Diseases, Urinary Tract Infections (UTI) and Sexually Transmitted Diseases (STD) (Chemotherapy– iii FUNGAL DISEASE)	394.	Chemotherapy– iii FUNGAL DISEASE	--- " ---	ESAG/PD50/103	Sunil Kumar	S. K. Kashaw
365.	Chemotherapy – V: Definition of Poison, General Principles of Treatment of Poisoning with Particular Reference to Barbiturates, Opioids, Organophosphorous and Atropine Poisoning Chemotherapy – VI: Heavy Metals and Heavy Metal Antagonists (Chemotherapy v & vi)	395.	Chemotherapy v & vi - 01	--- " ---	ESAG/PD50/135	Sunil Kumar	Trilochan Satapathy
		396.	Chemotherapy v & vi - 02	--- " ---	ESAG/PD50/135	Sunil Kumar	Trilochan Satapathy
366.	Historical Background Drug Legislation in India, Code of Pharmaceutical Ethics	397.	Historical Background - Drug Legislation in India, Code of Pharmaceutical Ethics	B.Pharm VII th Sem [Drug Legislation and Regulatory Affairs]	ESAG/PD50/135	Sunil Kumar	Y. S. Dangi
367.	Drug Laws – III: Medicinal and Toilet Preparations	398.	Drug laws– iii	--- " ---	ESAG/PD50/127	Sunil Kumar	Ram Kumar Sahu

	(Excise Duties Act, 1955) [Drug laws– iii]						
368.	Drug Laws – IV: Narcotic Drugs and Psychotropic Substances Act, 1985 and Rules [Drug laws– iv]	399.	Drug laws– iv	--- " ---	ESAG/PD50/127	Sunil Kumar	Ram Kumar Sahu
369.	Drug Laws – V: Drug (Prices Control) Order [Drug laws– v]	400.	Drug laws– v	--- " ---	ESAG/PD50/127	Sunil Kumar	Ram Kumar Sahu
370.	Drug Laws – VI: Drugs and Magic Remedies (Objectionable Advertisements) Act 1954 and Rules [Drug laws– vi]	401.	Drug laws– vi	--- " ---	ESAG/PD/163	Sunil Kumar	Ram Kumar Sahu
371.	Drug Laws – VII: Poisons Act Drug Laws – VIII: Factories Act Drug Laws – IX: Prevention of Cruelty to Animals Act [Drug laws]	402.	Drug laws	--- " ---	ESAG/PD/162	Sunil Kumar	Y. S. Dangi
372.	Introduction to IPR – I: Patent Act and Rules [Introduction to ipr 01]	403.	Introduction to ipr 01	--- " ---	ESAG/PD/86	Sunil Kumar	Dharmendra Jain
373.	Introduction to IPR – II: Designs Act [IPR (designs act) 01+02]	404.	IPR (designs act) 01	--- " ---	ESAG/PD/86	Sunil Kumar	Brajesh Kumar Tiwari
		405.	IPR (designs act) 02	--- " ---	ESAG/PD/86	Sunil Kumar	Brajesh Kumar Tiwari
374.	Introduction to IPR – III: Trade and Merchandise Marks Act [Trade and merchandise act]	406.	Trade & Merchandise Marks Act	--- " ---	ESAG/PD50/336	Sunil Kumar	Arun Nanda
375.	Introduction to IPR – IV: Monopolies and Restrictive Trade Practices Act [Monopolies and Restrictive Trade	407.	Monopolies and Restrictive Trade Practices Act	--- " ---	ESAG/PD50/336	Sunil Kumar	Brajesh Kumar Tiwari

	Practices Act]						
376.	Organization and Structure: Organization of a Hospital and Hospital Pharmacy, Responsibilities of a Hospital Pharmacist, Pharmacy and Therapeutic Committee, Budget Preparation and Implementation [Organization and structure organization of a hospital]	408.	Organization and structure organization of a hospital	B.Pharm VII th Sem [Clinical & Hospital Pharmacy]	ESAG/PD/75	Sunil Kumar	Brajesh Kumar Tiwari
377.	Hospital Formulary: Contents, Preparation and Revision of Hospital Formulary [Hospital formulary]	409.	Hospital formulary	--- " ---	ESAG/PD/163	Sunil Kumar	Brajesh Kumar Tiwari
378.	Drug Store Management and Inventory Control (Part I and Part II) [Drug store management and inventory control]	410.	Drug store management and inventory control	--- " ---	ESAG/PD/76	Sunil Kumar	Chanchal Deep Kaur
379.	Drug distribution Systems in Hospitals – II: Types of Drug Distribution Systems. Charging Policy, Labelling Drug distribution Systems in Hospitals – III: Dispensing of Drugs to Ambulatory Patients. Dispensing of Controlled Drugs [Drug distribution systems in hospitals - 1]	411.	Drug distribution systems in hospitals - 1	--- " ---	ESAG/PD50/121	Sunil Kumar	Chanchal Deep Kaur
		412.	Drug distribution systems in hospitals - 2	--- " ---	ESAG/PD50/121	Sunil Kumar	Chanchal Deep Kaur
380.	Central Sterile Supply Unit and their Management: Types of Materials for Sterilization, Packing of Materials Prior to Sterilization, Sterilization Equipments, Supply of Sterile Materials [Central Sterile Supply Unit and their	413.	Central Sterile Supply Unit and their Management Part 1	--- " ---	ESAG/PD50/134	Sunil Kumar	Chanchal Deep Kaur
		414.	Central Sterile Supply Unit and their Management Part 2	--- " ---	ESAG/PD50/134	Sunil Kumar	Chanchal Deep Kaur

	Management Part 1+2]						
381.	Manufacture of Sterile and Nonsterile Products – I Policy Making of Manufacturable Items, Demand and Costing, Personnel Requirements, Manufacture of Sterile and Nonsterile Products – II Manufacturing Practice, Master Formula Card, Production Control, Manufacturing Records [Manufacture of Sterile and Nonsterile Products]	415.	Manufacture of Sterile and Nonsterile Products	--- " ---	ESAG/PD50/108	Sunil Kumar	Chanchal Deep Kaur
382.	Drug Information Services: Sources' of Information on Drugs, Disease, Treatment Schedules, Procurement of Information, Computerized Services (e.g., MEDLINE), Retrieval of information, Medication Error [Drug information services]	416.	Drug Information Services	--- " ---	ESAG/PD50/104	Sunil Kumar	Chanchal Deep Kaur
383.	Records and Reports – I: Prescription Filling, Drug Profile, Patient Medication Profile Records and Reports – II: Cases on Drug Interaction and Adverse Reactions, Idiosyncratic Cases etc. [Records and reports]	417.	Records and Reports	--- " ---	ESAG/PD/136	Sunil Kumar	Brajesh Kumar Tiwari
384.	Introduction to Clinical Pharmacy Practice, Definition and Scope, Common Daily Terminology used in the Practice of Medicine, Functioning and Working of	418.	Introduction to Clinical Pharmacy Definition & Scope Part -I	--- " ---	ESAG/PD/23/147	Sunil Kumar	Chanchal Deep Kaur & Bina Gidwani
		419.	Introduction to Clinical Pharmacy Definition &	--- " ---	ESAG/PD/23/147	Sunil Kumar	Chanchal Deep Kaur & Bina

	Clinical Pharmacy Unit, Manpower Requirements [Introduction to Clinical Pharmacy Definition & Scope Part –I & II]		Scope Part -II				Gidwani
385.	Pharmacists and Patient Counselling Including Specific Examples [Pharmacists and patient counselling]	420.	Pharmacists and patient counselling	--- " ---	ESAG/PD/23/147	Sunil Kumar	Chanchal Deep Kaur + Bina Gidwani
386.	Concepts and Systems Designed for Rate Controlled Drug Delivery, Mechanism of The Drug Release from Matrix Systems and Reservoir Systems, Concept of Drug Targeting [Concept and system designed for rate controlled drug delivery]	421.	Concept and system designed for rate controlled drug delivery	B.Pharm VIII th Sem [Novel and Controlled Drug Delivery Systems]	ESAG/PD/23/150	Sunil Kumar	Vandana Soni
387.	Sustained and Controlled Drug Delivery – I: Design and Development, Physico-Chemical, Biological and Pharmacokinetic Properties Influencing Design and Performance of Controlled Release Products [Sustained and controlled drug delivery – i]	422.	Sustained and controlled drug delivery – i	--- " ---	ESAG/PD/76	Sunil Kumar	S. K. Kashaw
388.	Sustained and Controlled Drug Delivery – II: Materials and Methods Used in Their Formulation, Dose Designing, In Vitro and In Vivo Evaluation [Sustained and controlled drug delivery – ii]	423.	Sustained and controlled drug delivery – ii	--- " ---	ESAG/PD50/124	Sunil Kumar	S. K. Kashaw
389.	Concepts and Systems Designed for Rate Controlled Drug Delivery, Mechanism of The Drug Release from Matrix Systems and	424.	Micro– encapsulation– i, ii and iii	--- " ---	ESAG/PD23/190	Sunil Kumar	Rishi Paliwal

	Reservoir Systems, Concept of Drug Targeting [Micro–encapsulation– i, ii and iii]						
390.	Transdermal Drug Delivery Systems: Types and Design [Transdermal Drug Delivery Systems Part - I]	425.	Transdermal Drug Delivery Systems Part - I	--- " ---	ESAG/PD50/126	Rakesh Thakur	Bina Gidwani
391.	Transdermal Drug Delivery Systems: Fabrication [Transdermal Drug Delivery Systems Part - II]	426.	Transdermal Drug Delivery Systems Part - II	--- " ---	ESAG/PD50/126	Rakesh Thakur	Bina Gidwani
392.	Carrier/Vesicular Based Drug Delivery Systems: Liposomes [Carrier- vesicular based drug delivery systems (Liposomes)]	427.	Carrier- vesicular based drug delivery systems (Liposomes)	--- " ---	ESAG/PD50/226	Rakesh Thakur	Chanchal Deep Kaur
393.	Carrier/Vesicular Based Drug Delivery Systems: Niosomes [Carrier- vesicular based drug delivery systems (Niosomes)]	428.	Carrier- vesicular based drug delivery systems (Niosomes)	--- " ---	ESAG/PD50/127	Rakesh Thakur	Chanchal Deep Kaur
394.	Carrier/Vesicular Based Drug Delivery Systems: Pharmacosomes [Carrier- vesicular based drug delivery systems (Pharmacosomes)]	429.	Carrier- vesicular based drug delivery systems (Pharmacosomes)	--- " ---	ESAG/PD/159	Rakesh Thakur	Chanchal Deep Kaur
395.	General Consideration and Application of following Drug Delivery Systems: a) Bioadhesive and Mucoadhesive Drug Delivery b) Nanopulmonary Drug Delivery c) Occular Drug Delivery d) Pro-Drug [General consideration and application of following drug delivery systems Part- I+II]	430.	General consideration and application of following drug delivery systems Part- I	--- " ---	ESAG/PD/23/143	Rakesh Thakur	Vandana Soni
		431.	General consideration and application of following drug delivery systems Part- II	--- " ---	ESAG/PD/23/146	Rakesh Thakur	Vandana Soni
396.	Introduction To Biopharmaceutics & Pharmacokinetics – I:	432.	Introduction to biopharmaceutics &	B.Pharm VIII th Sem [Biopharmaceutics	ESAG/PD/81	Rakesh Thakur	Amit Alexander

	Pharmacokinetics and their Role in Formulation Development and Clinical Setting [Introduction to biopharmaceutics & pharmacokinetics – 01 (a)]		pharmacokinetics – 01 (a)	& Pharmacokinetics]			
397.	Introduction To Biopharmaceutics & Pharmacokinetics – I: Distribution, Metabolism and Elimination of Drugs [Introduction to biopharmaceutics & pharmacokinetics – 01 (b)]	433.	Introduction to biopharmaceutics & pharmacokinetics – 01 (b)	--- " ---	ESAG/PD/81	Rakesh Thakur	Amit Alexander
398.	Introduction To Biopharmaceutics & Pharmacokinetics – II: Biopharmaceutical study of Drugs, Blood Level Concentration [Introduction to biopharmaceutics & pharmacokinetics – 02 (a)]	434.	Introduction to biopharmaceutics & pharmacokinetics – 02 (a)	--- " ---	ESAG/PD/86	Rakesh Thakur	Amit Alexander
399.	Introduction to Biopharmaceutics & Pharmacokinetics – II Biological Half-Life and Elimination Rate Constant, Apparent Volume of Distribution [Introduction to biopharmaceutics & pharmacokinetics – 02 (b)]	435.	Introduction to biopharmaceutics & pharmacokinetics – 02 (b)	--- " ---	ESAG/PD50/121	Rakesh Thakur	Amit Alexander (Raipur)
400.	Passage of Drug Across GIT Membrane – I: Mechanism, Physico-Chemical, Biological and Pharmaceutical Factors Affecting Drug Absorption Through GIT [Factors affecting drug absorption through GIT]	436.	Factors affecting drug absorption through GIT	--- " ---	ESAG/PD/80	Rakesh Thakur	Ajazuddin (Raipur)
401.	Drug Disposition: Distribution in Blood, Plasma-Protein Binding, Application of Drug Protein Binding [Drug disposition]	437.	Drug disposition	--- " ---	ESAG/PD50/101	Rakesh Thakur	Y. S. Dangi

402.	Bioavailability and Bioequivalence – I: Definitions, Federal Requirements, Methods of Determination of Bioavailability Using Blood and Urinary Excretion Data [Bioavailability and bioequivalence]	438.	Bioavailability and bioequivalence	--- " ---	ESAG/PD/156	Rakesh Thakur	Y. S. Dangi
403.	Bioavailability and Bioequivalence – II: Protocol Designs for Bioavailability Assessment, Methods for Bioequivalence Determination [Bioavailability and bioequivalence – 2]	439.	Bioavailability and bioequivalence – 2	--- " ---	ESAG/PD/156	Rakesh Thakur	Preeti K. Suresh
404.	Compartment Models: Definition, Basis of Classification, Model Selection Criteria [Compartment models]	440.	Compartment models	--- " ---	ESAG/PD/163	Rakesh Thakur	Amit Alexander
405.	One-Compartment Open Model with First Order Elimination Kinetics – I: Pharmacokinetics of Single Dose Administration as Applied to Intravenous (Rapid/Bolus) and Oral Administration, Intravenous Transfusion [One Compartment open model with first order elimination kinetics-I]	441.	One Compartment open model with first order elimination kinetics-I	--- " ---	ESAG/PD/169	Rakesh Thakur	Arun Nanda
406.	One-Compartment Open Model with First Order Elimination Kinetics – II: Superposition Principle and Multiple Intravenous and Oral Administration, Pharmacokinetic	442.	One-compartment open model with first order elimination kinetics-II, Part - I	--- " ---	ESAG/PD50/133	Rakesh Thakur	Amit Alexander
		443.	One-compartment open model with first	--- " ---	ESAG/PD50/133	Rakesh Thakur	Amit Alexander

	Basis of Sustained Release Formulations [One-compartment open model with first order elimination kinetics-II, Part – I+II]		order elimination kinetics-II, Part - II				
407.	Two Compartment Open Model with First Order Elimination Kinetics – I: Pharmacokinetics of Single and Multiple Dose Administration, as Applied to Intravenous (Rapid/Bolus) [Two compartment open model with first order elimination kinetics-I]	444.	Two compartment open model with first order elimination kinetics-I	--- " ---	ESAG/PD/136	Rakesh Thakur	Rishi Paliwal
408.	Two Compartment Open Model with First Order Elimination Kinetics – II: Oral Administration Intravenous Infusion, Pharmacokinetic Basis of Sustained Release Formulations [Two compartment open model with first order elimination kinetics-II]	445.	Two compartment open model with first order elimination kinetics-II	--- " ---	ESAG/PD/206	Rakesh Thakur	Amit Alexander
409.	Absorption kinetics: Curve Fitting, Wagner-Nelson, Loo Riegelman Methods and Deconvolution Methods For Estimation of Absorption Rate Constants [Absorption kinetics]	446.	Absorption kinetics	--- " ---	ESAG/PD23/185	Rakesh Thakur	Amit Alexander
410.	Dosage regimen: Dosage Regimen Adjustment in Patients with and Without Renal Failure [Dosage regimen, part– 1+2]	447.	Dosage regimen, part– 1	--- " ---	ESAG/PD50/132	Rakesh Thakur	Amit Alexander
		448.	Dosage regimen, part– 2	--- " ---	ESAG/PD50/132	Rakesh Thakur	Amit Alexander

411.	Non-Compartmental Analysis: Statistical Moments, Application, Bioavailability Determination [Non-Compartmental Analysis Statical moments, Application, Bioavailability determination]	449.	Non-Compartmental Analysis Statical moments, Application, Bioavailability determination	--- " ---	ESAG/PD50/127	Rakesh Thakur	Amber Vyas
		450.	Non-Compartmental Analysis Statical moments, Application, Bioavailability determination	--- " ---	ESAG/PD50/127	Rakesh Thakur	Amber Vyas
412.	Non-Linear Pharmacokinetics: Michaelis-Menten's Kinetics, Pharmacokinetic Characteristics, In-Vivo Estimation of Km And Vm, Unit Impulse Response. Application in Bioavailability Determination [Non– linear pharmacokinetics]	451.	Non– linear pharmacokinetics	--- " ---	ESAG/PD50/133	Rakesh Thakur	Amber Vyas
413.	Study of Indigenous Traditional and Emerging Drugs with their Source: Amla (Phyllanthus Emblica) Harad (Myroblan-Treminalia Chebula) [Study of indigenous traditional and emerging drugs (Amla and harad)]	452.	Study of indigenous traditional and emerging drugs (Amla and harad)	B.Pharm VIII th Sem [Pharmacognosy and Phytochemistry – IV]	ESAG/PD/23/150	Rakesh Thakur	Chanchal Deep Kaur
414.	Study of Indigenous Traditional and Emerging Drugs with their Source: Baheda (Terminalia Belerca) Guduchi (Tinospora Cardifolia) [Study of indigenous traditional and emerging drugs (Baheda + gudhichi)]	453.	Study of indigenous traditional and emerging drugs (Baheda + gudhichi)	--- " ---	ESAG/PD50/124	Rakesh Thakur	Chanchal Deep Kaur
415.	Study of Indigenous Traditional and Emerging Drugs with their	454.	Kalmegh–	--- " ---	ESAG/PD23/190	Rakesh Thakur	Rupal Dubey

	Source: Kalmegh [Kalmegh]						
416.	Study of Indigenous Traditional and Emerging Drugs with their Source: Guggul [Guggul]	455.	Guggul–	--- " ---	ESAG/PD50/335	Rakesh Thakur	Rupal Dubey
417.	Study of Indigenous Traditional and Emerging Drugs with their Source: Salai (Boswellia Serrata) Brahmi (Centell Asiatica) [Salai & brahmi 1+2]	456.	Salai & brahmi - 1	--- " ---	ESAG/PD/136 ESAG/PD/175	Rakesh Thakur	Rupal Dubey
		457.	Salai & brahmi - 2	--- " ---	ESAG/PD/175	Rakesh Thakur	Rupal Dubey
418.	Study of Indigenous Traditional and Emerging Drugs with their Source: Shankpuspi (Convolvulus Microphyllus), Bach (Acorus Calamus) [Sankhpuspi & bach 1+2]	458.	Sankhpuspi & bach – 1	--- " ---	ESAG/PD23/175	Rakesh Thakur	Rupal Dubey
		459.	Sankhpuspi & bach – 2	--- " ---	ESAG/PD23/176	Rakesh Thakur	Rupal Dubey
419.	Study of Indigenous Traditional and Emerging Drugs with their Source: Kantkari (Solanum Xanthocarpum), Tulsi (Ocimum Sanctum) [kantkari & Tulsi 1+2]	460.	kantkari & Tulsi – 1	--- " ---	ESAG/PD50/200	Rakesh Thakur	Rupal Dubey
		461.	kantkari & Tulsi – 2	--- " ---	ESAG/PD/201	Rakesh Thakur	Rupal Dubey
		462.	kantkari	--- " ---	ESAG/PD/336	Rakesh Thakur	Rupal Dubey
420.	Study of Indigenous Traditional and Emerging Drugs with their Source: Valerian (Valerian Wallchi), Jatamansi (Nardostacys Jatamansi), Gokhru (Tribulus Terrestris), Arjuna (Terminalia Arjuna) [Jatamansi, Gokhru, Arjuna & Valerian]	463.	Jatamansi, Gokhru, Arjuna & Valerian	--- " ---	ESAG/PD/23/151	Rakesh Thakur	Ravindra Kumar Pandey

421.	Study of Indigenous Traditional and Emerging Drugs with their Source: Ashok (Saraca Indica), Vidang (Embelia Ribes), Lahsun (Garlic – Allium Sativum), Malkangni (Celastrus Paniculata) [Ashok, vidang , lahsun and malkangni]	464.	Ashok, Vidang , Lahsun and Malkangni	--- " ---	ESAG/PD/156	Rakesh Thakur	Ravindra Kumar Pandey
422.	Study of indigenous traditional and emerging drugs with their source Bhilwa (Semecarpus Anacadium), Chirayata (Swertia Chirata), Neem (Azadirachta Indica), Satavar (Asparagus Racemosus) [Study of indigenous traditional and emerging drugs Bhilwa, chirayata]	465.	Study of indigenous traditional and emerging drugs Bhilwa, chirayata	--- " ---	ESAG/PD50/103, ESAG/PD50/108	Rakesh Thakur	Anshita Gupta
		466.	Study of indigenous traditional and emerging drugs neem, satavar	--- " ---	ESAG/PD50/108	Rakesh Thakur	Anshita Gupta
423.	Study of Indigenous Traditional and Emerging Drugs with their Source: Safed Musli (Chlorophytum Borivalianum) Artemisia (Artemica Spp) Thylophora (Thylophora Indica) Morinda (Morinda Citrifolia) [Indian ipecac, Safed Musli, Morinda & Artemisia]	467.	Indian ipecac, Safed Musli, Morinda & Artemisia	--- " ---	ESAG/PD50/122	Rakesh Thakur	Ravindra Kumar Pandey
424.	Study of Indigenous Traditional and Emerging Drugs with their Source: Chitrak (Plumbago Zeylanicum), Haldi (Curcuma	468.	Chitrak (Plumbago zeylanicum), Haldi (Curcuma domestica), Tephrosia (Tephrosia purpurea)	--- " ---	ESAG/PD/158,	Rakesh Thakur	Anshita Gupta

	Domestica),Tephrosia (Tephrosia Purpurea), Bhui Amla (Phyllanthus Amarus), Shilajeet [Chitrak Haldi, Tephrosia, Tephrosia, Bhui Amla, Shilajeet]	469.	Tephrosia (Tephrosia purpurea), Bhui Amla (Phyllanthus amarus), Shilajeet	--- " ---	ESAG/PD/136	Rakesh Thakur	Anshita Gupta
425.	Introduction to Dosage Forms In Indian System of Medicine with Preparation and Standardization of Some Important Dosage Forms such as Asavas Arishtas, Avalehas and Churnas [Dosage forms in indian system of medicine – 01]	470.	Dosage forms in indian system of medicine – 01	--- " ---	ESAG/PD/80	Rakesh Thakur	Anshita Gupta
426.	Introduction to Dosage Forms In Indian System of Medicine with Preparation and Standardization of Some Important Dosage Forms such as Asavas Arishtas, Avalehas and Churnas [Dosage forms in indian system of medicine – 02]	471.	Dosage forms in indian system of medicine – 02	--- " ---	ESAG/PD/80	Rakesh Thakur	Anshita Gupta
427.	Extraction, isolation, identification and characterization of Phytoconstituents of Alkaloids & Glycosides.	472.	Extraction, isolation, identification and characterization of Phytoconstituents of Alkaloids & Glycosides	--- " ---	ESAG/PD/198	Rakesh Thakur	Chanchal Deep Kaur + Anshita Gupta
428.	Extraction, its strategy and procedure of extraction herbal drugs	473.	Extraction, its strategy and procedure of extraction herbal drugs	--- " ---	ESAG/PD50/121	Rakesh Thakur	Chanchal Deep Kaur + Anshita Gupta
429.	Phytoconstituents their types, investigation plans, drying & grinding	474.	Phytoconstituents their types, investigation plans, drying & grinding	--- " ---	ESAG/PD/23/228	Rakesh Thakur	Chanchal Deep Kaur + Anshita Gupta
430.	Carbohydrates: It's Importance, Classification, Methods of	475.	Carbohydrates it's importance,	--- " ---	ESAG/PD/23/143	Rakesh Thakur	Chanchal Deep Kaur + Anshita

	Extraction and Chemical Test [Carbohydrates it's importance, classification]		classification				Gupta
431.	General method of Extraction, Isolation, Identification and Characterization of Phytoconstituents of Phenolic and Steroidal groups, General Introduction to Phenolic Compounds, Extraction of Phenolic Compounds, General Chemical Test Methods [General method of extraction, isolation, identification and characterization of phytoconstituents of Phenolic and Steroidal groups. – 01]	476.	General method of extraction, isolation, identification and characterization of phytoconstituents of Phenolic and Steroidal groups. – 01	--- " ---	ESAG/PD50/110	Rakesh Thakur	Anshita Gupta
432.	General method of Extraction, Isolation, Identification and Characterization of Phytoconstituents of Phenolic and Steroidal groups, General Chemical Test Methods, Tannins, Steroids, Terpenoids [General method of extraction, isolation, identification and characterization of phytoconstituents of Phenolic and Steroidal groups. – 02]	477.	General method of extraction, isolation, identification and characterization of phytoconstituents of Phenolic and Steroidal groups. – 02	--- " ---	ESAG/PD50/110	Rakesh Thakur	Anshita Gupta
433.	An Introduction to Tissue Culture Techniques with Their Scope as Alternative Source of Phyto-Pharmaceuticals [tissue culture techniques + An introduction to Tissue culture techniques with	478.	tissue culture techniques	--- " ---	ESAG/PD/23/160	Rakesh Thakur	Amit Roy
		479.	An introduction to Tissue culture techniques with their scope as alternative		ESAG/PD/23/160	Rakesh Thakur	Amit Roy

	their scope as alternative source of Phyto-Pharmaceuticals. - 02]		source of Phyto-Pharmaceuticals. - 02				
434.	An Overview of Plants as Source of Bitters, Sweeteners, Colours, Flavoures, Carotinoids, Photosensitizing Agents and Vaccines [An overview of plants as source of Bitters, Sweeteners, Colours, Flavoures, Carotinoids, photosensitizing agents and Vaccines]	480.	An overview of plants as source of Bitters, Sweeteners, Colours, Flavoures, Carotinoids, photosensitizing agents and Vaccines	--- " ---	ESAG/PD/206	Rakesh Thakur	Shrad Prakash Rao
435.	Concept of CGMP, Total Quality Management [Concept of CGMP, total quality management – 1+2]	481.	Concept of CGMP, total quality management – 1	B.PharmVIII th Sem [GMP, Quality Assurance & Validation]	ESAG/PD/159,	Rakesh Thakur	Chanchal Deep Kaur
		482.	Concept of CGMP, total quality management – 2	--- " ---	ESAG/PD50/104	Rakesh Thakur	Chanchal Deep Kaur
436.	GLPS, ISO 9000 [Concept of GLPS, iso 9000]	483.	Concept of GLPS, iso 9000	--- " ---	ESAG/PD/159	Rakesh Thakur	Chanchal Deep Kaur
437.	Concept of CGMP, Total Quality Management, GLPS, ISO 9000 [Concept of CGMP, total quality management]	484.	Concept of CGMP, total quality management	--- " ---	ESAG/PD/23/144	Dr. Pankaj Tiwari	Dharmesh Bigoniya
438.	Premises, Location Design, Plant Layout, Construction, Maintenance of Sterile Areas, Control of Contamination [Premises, location design, plant layout, construction, maintenance of sterile areas, control of contamination]	485.	Premises, location design, plant layout, construction, maintenance of sterile areas, control of contamination	--- " ---	ESAG/PD/23/143	Rakesh Thakur	Shiv Shankar Shukla
439.	Equipment Selection, Raw Material Purchase Specification, In	486.	Equipment selection, Raw material purchase	--- " ---	ESAG/PD/23/144	Rakesh Thakur	Shiv Shankar Shukla

	Process Quality Controls [Equipment selection, Raw material purchase specification, In process quality controls_Part- I+II]		specification, In process quality controls_Part- I				
		487.	Equipment selection, Raw material purchase specification, In process quality controls_Part- II	--- " ---	ESAG/PD/23/144	Rakesh Thakur	Shiv Shankar Shukla
440.	Glass Containers for Pharmaceuticals: Glass Types, Their Manufacture, Chemical Performance, Testing & Quality Control [Glass container]	488.	Glass Containers	B.Pharm VIII th Sem [Packaging Technology]	ESAG/PD/23/151	Rakesh Thakur	Y. S. Dangi
441.	Plastic Containers for Pharmaceuticals – I: Classification of Plastic, Plastic Polymers and their Physicochemical, Mechanical and Biological Properties, Additives and Fabrication Processes [Plastic containers for pharmaceuticals– i]	489.	Plastic containers for pharmaceuticals-I	--- " ---	ESAG/PD/23/149	Rakesh Thakur	Shrad Prakash Rao
442.	Plastic Containers for Pharmaceuticals – II: Plastic Containers for Parenterals and Transfusion Sterile Drip Kits, Quality Control Testing, Biological Toxicity [Plastic containers for pharmaceuticals-II (A+B)]	490.	Plastic containers for pharmaceuticals-II (A)	--- " ---	ESAG/PD/149	Rakesh Thakur	Shrad Prakash Rao
		491.	Plastic containers for pharmaceuticals-II (B)	--- " ---	ESAG/PD/218	Rakesh Thakur	Shrad Prakash Rao
443.	Paper and Paper Board: Types of Paper, Folding Cartons, Quality Control Testing of Paper and Paper Board [Paper and paper board]	492.	Paper & paper board	--- " ---	ESAG/PD/216	Rakesh Thakur	Shivani Rai Paliwal
444.	Metal Containers: Aluminium and Tin Plate, Drums, Collapsible Tubes and Aerosol	493.	Metal containers	--- " ---	ESAG/PD50/138	Rakesh Thakur	Shivani Rai Paliwal

	Containers, Lacquering, Coating and Lining [Metal containers]						
445.	Caps and Closures – I: Types of Caps, Closure, Liners, Child Resistant Caps, Elastomeris Closures for Parenterals [Caps and closures 1+2]	494.	Caps and closures 1 (part 1)	--- " ---	ESAG/PD/157	Rakesh Thakur	Amit Alexander
		495.	Caps and closures 1 (part 2)	--- " ---	ESAG/PD/157	Rakesh Thakur	Amit Alexander
446.	Caps and Closures – II: Classification of Elastomers, Physical, Chemical and Biological Properties and Their Quality Control [Caps and closures 2]	496.	Caps and closures 2	--- " ---	ESAG/PD50/97	Rakesh Thakur	Y. S. Dangi
447.	Labels and Labelling: Types of Labels, Adhesives, Inkjet and Bar Coding [Labels and labelling 1+2]	497.	Labels and labelling – 1	--- " ---	ESAG/PD/85,	Rakesh Thakur	Bina Gidwani
		498.	Labels and labelling – 2	--- " ---	ESAG/PD/86	Rakesh Thakur	Bina Gidwani
448.	Flexible Packaging: Types of Films, Co-Extruded Films, Foils, Coating and Laminates, Shrink and Stretch Films [Flexible packaging]	499.	Flexible packaging	--- " ---	ESAG/PD/84	Rakesh Thakur	Y. S. Dangi
449.	Corrugated and Solid Fiber Boards and Boxes: Types of Corrugation Methods [Corrugated and solid fiber boards and boxes]	500.	Corrugated and solid fiber boards and boxes	--- " ---	ESAG/PD/80	Rakesh Thakur	Bina Gidwani
450.	Packaging Machinery – I Including Strip Packaging, Form, Fill and Seal Machines [Packaging machinery – 1+2]	501.	Packaging machinery – 1	--- " ---	ESAG/PD/86	Rakesh Thakur	Bina Gidwani
		502.	Packaging machinery – 2		ESAG/PD/86		
451.	Liquid and solid filling and capping machinery	503.	Liquid and solid filling and capping machinery	--- " ---	ESAG/PD50/138	Rakesh Thakur	Sanju Nanda

452.	Transit Worthiness of Package Tamper Evident Packaging Systems [Tamper evident packaging 1 +2]	504.	Tamper evident packaging – 1	--- " ---	ESAG/PD50/139	Rakesh Thakur	Sanju Nanda
		505.	Tamper evident packaging - 2	--- " ---	ESAG/PD50/139	Rakesh Thakur	Sanju Nanda
453.	2-D QSAR-I: Traditional Method of Drug Design [Traditional method of drug design]	506.	Traditional method of drug design	B.Pharm VIII th Sem [Drug Design]	ESAG/PD50/91	Shivkant Singh	Om Silakari
454.	2-D QSAR – II: Physicochemical Properties of Compounds: Lipophilic, Electrophilic and Steric, Their Role in Drug Action 2-D QSAR – III: Physicochemical Parameters: Partition Coefficient, Chromatographic Parameters p _{ka} Values, Chemical Shift Values 2-D QSAR – IV: Physicochemical Parameters: Molar Refractivity, Van Der Waals Radii, Molecular Connectivity, Simple Valence and Calculation Thereof [2D QSAR– ii]	507.	2-D QSAR-II	--- " ---	ESAG/PD23/183	Shivkant Singh	Om Silakari
455.	2-D QSAR-VI: Hansch Analysis and Free Wilson Method [2-D QSAR-VI Hansch Analysis And Free- Wilson Methods]	508.	2-D QSAR-VI Hansch Analysis And Free- Wilson Methods	--- " ---	ESAG/PD50/115	Shivkant Singh	Om Silakari
456.	2-D QSAR-VII: Multiple Regression Analysis, Cross Correlation [2-D QSAR (Multiple regression)]	509.	2-D QSAR (Multiple regression)	--- " ---	ESAG/PD50/335	Shivkant Singh	Om Silakari
457.	3-D QSAR-I: Drawbacks of 2-D QSAR and Need	510.	3-D QSAR-I	--- " ---	ESAG/PD50/137	Shivkant Singh	Vivek Kumar Vyas

	for 3-D QSAR, Sources of Hits, Combinatorial Libraries, Selection of a Lead, Optimization of a Lead, Drug Targets [3D QSAR– i]						
458.	3-D QSAR – II: X-Ray Crystallography, NMR and Drug Design, Homologous Modelling [3-D QSAR-II X-RAY CRYSTALLOGRAPHY, NMR AND HOMOLOGOUS MODELING IN DRUG DESIGN]	511.	3-D QSAR-II X-RAY CRYSTALLOGRAPHY, NMR AND HOMOLOGOUS MODELING IN DRUG DESIGN	--- " ---	ESAG/PD/197	Shivkant Singh	Om Silakari
459.	3-D QSAR-III: Thermodynamic Consideration of Drug Binding – Free Energy Change, Enthalpy Change, Electrostatic Interaction, Ionic Bond, Charge – Dipole & Dipole, Dipole Interactions, Dispersion Forces [Thermodynamic considerations of drug binding]	512.	THERMODYNAMIC CONSIDERATIONS OF DRUG BINDING	--- " ---	ESAG/PD50/111	Shivkant Singh	S. K. Kashaw
460.	3-D QSAR – IV: Entropic Contributions: Translational and Rotational Entropy, Hydrophobic Effect, Salvation Effects [3D QSAR– iv]	513.	3D QSAR– iv	--- " ---	ESAG/PD23/184	Shivkant Singh	Ankur Vaidya
461.	3-D QSAR – V: Intermolecular Interaction: Free Energy Perturbation and Partitioning Method [Quality Structure Activity Relationship 3D QSAR– v]	514.	Quality Structure Activity Relationship 3D QSAR– v	--- " ---	ESAG/PD23/185	Shivkant Singh	Ankur Vaidya
462.	3-D QSAR – VI: Ligand Receptor Interaction:	515.	3D QSAR– vi	--- " ---	ESAG/PD23/183	Shivkant Singh	Ankur Vaidya

	Intrinsic Binding Energies, Role of Stereochemistry In Drug Design [3D QSAR– vi]						
463.	3-D QSAR – VII: Structure Based Drug Design and Pharmacophore Based Drug Design, Softwares of Drug Design [3D QSAR– vii]	516.	3D QSAR– vii	--- " ---	ESAG/PD23/184	Shivkant Singh	Ankur Vaidya
464.	Definition and Basis of Drug Interactions Mechanism of Drug Interactions, Factors Contributing to the Occurrence of Drug Interactions [Definition and basis of drug interactions]	517.	Definition and basis of drug interactions	B.Pharm VIII th Sem [Drug Interactions]	ESAG/PD50/100	Shivkant Singh	Vijay Mishra
465.	Drug-Drug Interactions with Reference to Analgesics, Anti-inflammatory Drugs, Diuretics and Antibiotics [Drug– drug interaction– part 1]	518.	Drug– drug interaction– part 1	--- " ---	ESAG/PD50/101	Shivkant Singh	Vijay Mishra
466.	Drug-drug Interactions with Reference to Gastro-Intestinal Agents, Antibiotics, Vitamins and Hypoglycemic Drugs [Drug– drug interaction– part 1]	519.	Drug– drug interaction– part 2	--- " ---	ESAG/PD/161	Shivkant Singh	Rupesh K. Gautam
467.	Use of Drug Interactions Information a) Food and Drug Interactions b) Nicotine and Drug Interactions c) Alcohol and Drug Interactions [Use of drug interaction information]	520.	Use of drug interaction information	--- " ---	ESAG/PD/226	Shivkant Singh	Varsha Kashaw
468.	Adverse Drug Reactions, Patients Variables, Legal Aspects, Drug Interactions Litigation [Non	521.	Non Pharmacological Adverse Drug Reaction	--- " ---	ESAG/PD50/115	Dr. Pankaj Tiwari	Papiya Bigoniya
		522.	Non Pharmacological	--- " ---	ESAG/PD50/115	Dr. Pankaj	Papiya Bigoniya

	Pharmacological Adverse Drug Reaction 1 +2]		Adverse Drug Reaction			Tiwari	
469.	Adverse Drug Reactions: Patients Variables, Legal Aspects, Drug Interactions Litigation [Adverse drug reaction]	523.	Adverse drug reaction	--- " ---	ESAG/PD/161	Shivkant Singh	Varsha Kashaw
470.	Introduction to Nutraceuticals as Science, Historical Perspective, Classification, Scope, Applied Aspects of the Nutraceutical Science, Sources Of Nutraceuticals [Introduction to nutraceuticals as science]	524.	Introduction to nutraceuticals as science	B.Pharm VIII th Sem [Nutraceuticals]	ESAG/PD50/94	Rajendra Vishwakarma	Sunil K. Jain
471.	Relation of Nutraceutical Science with other Sciences: Medicine, Human Physiology, Genetics, Food Technology, Chemistry and Nutrition [Relation of nutraceutical science with other sciences]	525.	Relation of nutraceutical science with other sciences	--- " ---	ESAG/PD/170	Rajendra Vishwakarma	Rupesh K. Gautam
472.	Properties, Structure and Functions of Various Nutraceuticals: Glucosamine, Octacosanol, Lycopene, Carnitine, Melatonin [nutraceuticals]	526.	nutraceutical	--- " ---	ESAG/PD23/194	Rajendra Vishwakarma	Vijay Mishra
473.	Properties, Structure and Functions of Ornithine Alpha Ketoglutarate, Use of Proanthocyanidins, Grape Products, Flaxseed Oil as Nutraceuticals [Properties, structure and functions of Ornithine alpha ketoglutarate]	527.	Properties, structure and functions of Ornithine alpha ketoglutarate	--- " ---	ESAG/PD50/112	Rajendra Vishwakarma	Vijay Mishra
474.	Current Global Trends in Nutraceuticals, Their Types, Raw	528.	nutraceutical	--- " ---	ESAG/PD/162	Rajendra Vishwakarma	Rupesh K. Gautam

	Materials, Quality Control and Assurance, Regulatory Affairs and Commerce in Nutraceuticals, Nutraceuticals and their Significance in the Prevention and Treatment of Diseases [Nutraceuticals]						
475.	New technologies in development of Nutraceuticals and functional foods and chemoprevention and Nutraceuticals. Nutraceuticals and the future of medical science and consumer's views on nutraceuticals [New technologies in development of nutraceuticals and functional foods]	529.	New technologies in development of nutraceuticals and functional foods	--- " ---	ESAG/PD/165	Rajendra Vishwakarma	Rupesh K. Gautam
476.	Chemical and Spectral Approaches to simple Molecules of Natural Origin, Concepts of Stereoisomerism taking examples of Natural Products [Sterioisomerism of natural products]	530.	Stereoisomerism of natural products	B.Pharm VIII th Sem [Herbal Drug Technology]	ESAG/PD/164	Rajendra Vishwakarma	Vimal Kumar + Anuj Modi
477.	Chemistry, Biogenesis and Pharmacological Activity of Medicinally Important Monoterpenes, Sesquiterpenes. Chemistry, Biogenesis and Pharmacological Activity of Medicinally Important Diterpenes and Triterpenoids [Chemistry biogenesis and pharmacological activity of terpenoids]	531.	Chemistry biogenesis and pharmacological activity of terpenoids	--- " ---	ESAG/PD/195	Rajendra Vishwakarma	Vimal Kumar + Anuj Modi
478.	Glycosides: Chemistry and Biogenesis of Digitoxin, Digoxin, Hecogenin, Sennosides And	532.	Chemistry and biogenesis of digitoxin, digoxin, hecogenin,	--- " ---	ESAG/PD50/227	Rajendra Vishwakarma	Vimal Kumar + Anuj Modi

	Diosgenin [Chemistry and biogenesis of digitoxin, digoxin, hecogenin, sennosides and diosgenin]		sennosides and diosgenin				
479.	Alkaloids – I: Chemistry, Biogenesis and Pharmacological Activity of Atropine and Related Compounds, Quinine, Reserpine [Alkaloids – 01]	533.	Alkaloids – 01	--- " ---	ESAG/PD50/102	Dr. Pankaj Tiwari	Alok Shukla
480.	Alkaloids – II: Chemistry, Biogenesis and Pharmacological Activity of Morphine, Papaverine, Ephedrine, Ergot and Vinca Alkaloids [Alkaloids – 02]	534.	Alkaloids – 02	--- " ---	ESAG/PD23/186	Dr. Pankaj Tiwari	Alok Shukla
481.	Chemistry and Biogenesis of Medicinally Important Lignans and Quassanoids, Flavonoids [Chemistry and biogenesis of medicinally important lignans and quassanoids, flavonoids.]	535.	Chemistry and biogenesis of medicinally important lignans and quassanoids, flavonoids.	--- " ---	ESAG/PD50/138	Rajendra Vishwakarma	Vimal Kumar + Anuj Modi
482.	Natural Allergens, Photosensitizing Agents and Fungal Toxins [Natural allergence, photosensitizing agents and toxins plants]	536.	Natural allergence, photosensitizing agents and toxins plants	--- " ---	ESAG/PD/23/145	Rajendra Vishwakarma	Vimal Kumar + Anuj Modi
483.	Plant Bitters and Sweeteners [plant bitters and sweeteners]	537.	plant bitters and sweeteners	--- " ---	ESAG/PD/199	Rajendra Vishwakarma	Vimal Kumar + Anuj Modi
484.	Introduction to Plant Vaccines [Herbal Drug to plant vaccines]	538.	Herbal Drug to plant vaccines	--- " ---	ESAG/PD23/189	Rajendra Vishwakarma	Vimal Kumar + Anuj Modi
485.	Herbal Constituents in Cosmetics	539.	Herbal constituents in cosmetics	--- " ---	ESAG/PD50/132	Rajendra Vishwakarma	Chanchal Deep Kaur
486.	Marine Pharmacognosy: Novel Medicinal Agents from Marine Sources [Herbal drug technologies]	540.	Herbal drug technologies	--- " ---	ESAG/PD/168	Rajendra Vishwakarma	Vimal Kumar + Anuj Modi

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