

FACULTY OF PHARMACY

B. Pharmacy III-Semester (CBCS) (Main) Examination, January 2018

Subject : Pharmaceutical Analysis –I (Chemical Analysis)

Time: 3 Hours

Max. Marks: 70

Note: Answer all questions. All Questions carry equal marks.

- 1 a) i) What are Primary and Secondary Standard? Write Ideal Properties of Primary Standard. 6
 ii) Define following terms: 8
 a) Significant figures b) Equivalence point c) Indicator d) Linearity
OR
 b) i) Define concept of error. Explain about various sources of errors and their rectification. 10
 ii) Define following terms
 (a) Sensibility (b) Standard deviation 4
- 2 a) i) Discuss law of mass action and its significance. 6
 ii) Solubility of AgCl is 0.0015 g dm^{-3} . Calculate solubility product. 4
 iii) Calculate P^H of 0.05 M solution of Sodium Acetate (dissociation constant of acetic acid is 1.8×10^{-5}). 4
OR
 b) i) Derive equations to calculate the P^H value of aqueous solution of salts obtained from weak acid and strong base. 10
 ii) How do you prepare and standardize 0.1M NaOH? 4
- 3 a) i) Discuss briefly conditions to be observed during precipitation in gravimetric analysis? 6
 ii) What is Oxidation- reduction Potential ? How it is determined in red-ox system? 8
OR
 b) i) Write a note on adsorptive Indicators. 4
 ii) Write a note on red-ox indicators. 5
 iii) How do you prepare and standardize 0.1M Sodium thiosulphate? 5
- 4 a) i) Explain about various methods of complexometric titrations. 8
 ii) Write a note on adsorbents used in gas analysis. 6
OR
 b) i) Write Principle, procedure apparatus used in Assay of Nitrous Oxide. 6
 ii) How do you prepare & Standardize following solution? 8
 (i) 0.1M EDTA (ii) 0.1 M Sodium Thiosulphate.
- 5 a) i) How will you balance following equation by applying ion-electron method? 8

$$\text{FeCl}_3 + \text{SnCl}_2 \rightarrow \text{FeCl}_2 + \text{SnCl}_4$$

 ii) Calculate volume of water required to prepare 15% phosphoric and from 80% Phosphoric acid. 6
OR
 b) i) Define terms molarity & Normality. How do you prepare 1000 ml each of 0.1N NaOH, 0.1N H_2SO_4 , 0.1N I_2 and 0.1 N HCl. (2+3+3+3+3)

Code No. 1131/CBCS

FACULTY OF PHARMACY

B. Pharmacy III–Semester (CBCS) (Main) Examination, January 2018

Subject: Pharmaceutical Microbiology

Time: 3 Hours

Max. Marks: 70

Note: Answer all questions. All questions carry equal marks.

1. a. Explain in detail about external parts of bacteria with neat labeled diagram 8
b. What are protoplasts and spheroplasts? 6
OR
- a. Explain direct microscopic and electronic enumeration of bacteria. 8
b. Explain maintenance of pure culture by Lyophilization. 6
2. a. Write in detail about conjugation and transduction. 14
OR
- b. Explain in detail about lytic and lysogenic cycle in bacteriophages. 14
3. a. Explain control of microorganisms by chemical agents. 14
OR
- b. What are sterilization indicators? Explain Various types in detail. 14
4. a. Explain about primary/non specific first line defense mechanisms. 14
OR
- b. Explain the role of T Helper cells in defense mechanism. 14
5. a. Write in detail about causative organism, Mode of transmission, pathogenesis, symptoms, diagnosis, treatment, prevention and control of malaria. 14
OR
- b. Write in detail about microbiology of milk. 14



Code No. 1132/CBCS

FACULTY OF PHARMACY

B. Pharmacy III–Semester (CBCS) (Main) Examination, January 2018

Subject: Pharmaceutical Engineering – I

Time: 3 Hours

Max. Marks: 70

Note: Answer all questions. All questions carry equal marks.

1. a) Write the advantages, disadvantages and applications of stainless steel as material of construction. (7)
b) Classify different types of corrosion (7)

OR

 - c) Explain the different factors affecting corrosion with the help of diagrams. (6)
 - d) Explain the different methods of prevention of corrosion with the help of diagrams. (8)
2. a) Define conduction, convection, radiation, black body and gray body. (5)
b) Derive the equation for the measurement of pressure by using simple manometer with help of diagram. (9)

OR

 - c) Write the construction and working of Venturi meter and derive the equation for measurement of flow velocity (7)
 - d) Write the various energy losses during the flow of fluids. (7)
3. a) Explain the concept check valves with help of diagram. (6)
b) Explain the principle involved in the working of reciprocating pump with the help of diagram.

OR

 - c) Classify conveyors and write construction and working of belt conveyor. (8)
 - d) Differentiate between fans, blowers and compressor with help of diagrams. (6)
4. a) What is humidity chart and explain the methods of determining humidity by using it. (7)
b) Explain the stages in compression refrigeration cycle along with diagram. (7)

OR

 - c) Write the mechanisms of dehumidification and humidification. (6)
 - b) Explain the construction and working of air conditioner. (8)
5. a) Write the construction and working of continuous centrifuge with the help of diagram, and mention its applications. (7)
b) Describe construction and working of De Laval Clarifier. (7)

OR

 - c) Write the construction and working of perforated basket centrifuge with the help of diagrams, mention its applications and limitations. (6)
 - d) Write the construction and working of plate and frame filter press with washing facility. (6)

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Code No. 1133/CBCS

FACULTY OF PHARMACY

B. Pharmacy III–Semester (CBCS) (Main) Examination January 2018

Subject: Environmental Studies

Time: 3 Hours

Max. Marks: 70

Note: Answer all questions. All questions carry equal marks.

1. (a) Describe the biotic and abiotic components of ecosystem. (8)
(b) Discuss in detail about conservation of natural resources. (6)
(OR)
(c) Explain the sustainability theory and practice. Discuss its importance. (8)
(d) Write a note on forest resources and its conservation. (6)
2. (a) Discuss the importance and value of biodiversity. (8)
(b) Discuss about wild life sanctuaries and biosphere reserves. (6)
(OR)
(c) Write about various hot spots of India. (6)
(d) Explain about insitu and exsitu conservation of biodiversity. (8)
3. (a) Discuss soil pollution and mention its effects on ground water quality (6)
(b) Discuss about Hazardous waste management. (8)
(OR)
(c) Write briefly on waste recycle and reuse. (6)
(d) What are the green house gases and explain the causes and consequences of global warming. (8)
4. (a) Discuss various social issues existing in the society and suggest possible solutions (8)
(b) Describe briefly wasteland reclamation, consumerism and waste products. (6)
(OR)
(c) Write a note on resettlement and rehabilitation of people. (5)
(d) Write short notes on the following (9)
i) Rain water harvesting
ii) Bioterrorism
iii) Urbanization
5. (a) Discuss briefly forest conservation act and wild life protection act. (10)
(b) Write about eco-audit and eco-labelling. (4)
(OR)
(c) Discuss the following
i) RIO convention ii) Kyoto convention iii) EIA iv) RTI act (3+3+4+4)

Code No. 1129/CBCS

FACULTY OF PHARMACY

B. Pharmacy III – Semester (CBCS) (Main) Examination January 2018

Subject: Pharmaceutical Organic Chemistry – II

Time: 3 Hours

Max. Marks: 70

Note: Answer all questions. All questions carry equal marks.

1. (a) Explain the following reactions of benzene with examples. 8
i. Sulphonation ii. Halogenation
(b) Explain the nucleophilic substitution reactions of halobenzenes with special emphasis on benzyne mechanism. 6
OR
- (c) Explain the following: 4
i. Huckel's $(4n+2)\pi$ rule 3
ii. Haworth synthesis of naphthalene 3
iii. Oxidation reactions of anthracene 4
iv. Reimer-Tiemann reaction of phenols 4
2. (a) Differentiate between following terms with examples 8
i. Enantiomer and diastereomer
ii. Absolute and relative configurations
(b) Explain the elements of symmetry with relevant examples. 6
OR
- (c) Define the terms: Plane polarized light, plane of symmetry, geometrical isomerism, racemic modification and resolution. 5
(d) Explain the relationship between following concepts with optical activity. 9
i. Enantiomerism ii. Asymmetry iii. Chirality
3. (a) Why electrophilic substitution takes place at 2- & 5-position in furan? Explain with examples. 5
(b) Explain the oxidation reactions of quinoline and isoquinoline. 5
(c) Write structure and specific uses of two medicinally important compounds representing each of thiophene and pyrrole. 4
OR
- (d) Write a note on the following: 3
i. Bischler-Napieralski synthesis 3
ii. Fischer-Indole synthesis 3
iii. Hantzsch pyridine synthesis 3
(e) Comment on the relative basicities of pyrrole and pyridine. 5
4. (a) Explain any two methods of preparation each of imidazole and benzimidazole. 10
(b) Write the structure and uses of medicinal compounds (two) containing following heterocyclic compounds. 4
i. Benzopyran ii. Cepham
OR
- (c) Explain any two methods of preparation each for isoxazole and thiazole. 8
(d) Write the structure and uses of medicinal compounds (two) containing following heterocyclic compounds. 6
i. Isoxazole ii. Penam iii. Triazole

FACULTY OF PHARMACY

B. Pharmacy II-Semester (CBCS) (Main) Examination, July 2017

Subject : Pharmaceutical Organic Chemistry

Time : 3 Hours

Max. Marks: 70

Note: Answer all questions. All questions carry equal marks.

- 1 (a) (i) Discuss atomic and molecular orbitals. 4
 (ii) Explain dipole moment with examples. 4
 (iii) Write different types of covalent bonds. 6
 OR
 (b) What is Isomerism? Explain with suitable examples. 5
 (c) Explain energy diagrams of reactants and products. 9
- 2 (a) Write the mechanism of free radical reactions. 8
 (b) Write any three methods of synthesis of Alkanes. 6
 OR
 (c) Write any three general methods of preparation of alkynes. 6
 (d) Discuss the importance of Bayer's strain theory. 8
- 3 (a) Explain the mechanism of :
 (i) SN^1 and SN^2 reactions 5
 (ii) E^1 and E^2 reactions. 5
 (b) Write a note on oxidation of Alcohols. 4
 OR
 (c) Write in brief about the preparation and reactions of Ethers. 10
 (d) Write note on Walden inversion. 4
- 4 (a) Write the reaction and mechanism of following: (4x3.5)
 (i) Aldol condensation (ii) Cannizzaro reaction
 (iii) Wittig reaction (iv) Reformatsky reaction
 OR
 (b) Write any two methods each to synthesis Aldehydes and Ketones. 7
 (c) How do you differentiate between primary, secondary and tertiary amines with chemical reactions? 7
- 5 (a) Write the Synthetic applications of Acetoacetic ester and malonic ester. 8
 (b) Write any two methods for synthesis of Carboxylic acids. 6
 OR
 (c) Explain in detail the acidity of carboxylic acid with examples. 7
 (d) Outline the methods of preparation of acid chlorides and amides. 7

FACULTY OF PHARMACY

B. Pharmacy II – Semester (CBCS) (Main) Examination, July 2017

Subject : Introduction to Dosage Forms



Time : 3 hours

Max. Marks : 70

Note : Answer all questions. All questions carry equal marks.

- 1 a) Classify various dosage forms with examples. 4
 b) Write the principle and procedure involved in the preparation of simple syrup. 6
 c) Write any two methods of preparation of aromatic waters. 4
 OR
 d) Classify emulsifying agents with examples. 6
 e) Distinguish the following :
 i) Flocculated and deflocculated suspensions
 ii) Creaming and Cracking
 iii) Lotions and Liniments 3+3+2
- 2 a) Mention the various types of tablet dosage forms. Write the method of direct compression and slugging process. 7
 b) Differentiate hard gelatin and soft gelatin capsules. Write the processing of soft gelatin capsules. 7
 OR
 c) Classify powders and write the general method of preparation and marketed products of dusting powders and effervescent granules. 10
 d) Write a note on lozenges. 4
- 3 a) Write about different types of ointment bases with their advantages and limitations. 10
 b) Write the principle and procedure in the preparation of cold cream. 4
 OR
 c) Discuss about various jelling agents used for the preparation of jellies. 7
 d) Define Displacement value. Calculate the displacement value of zinc oxide if 12 theobroma oil suppositories containing 40% zinc oxide weighing 17.0 grams. Assume that the suppositories are made in a 1 gm mould. 7
- 4 a) Distinguish the following :
 i) Dry heat and moist heat sterilization
 ii) Tyndallization and Pasteurization
 iii) Vials and ampoules
 iv) Water for injection and distilled water 4+4+4+2
 OR
 b) Write the composition and preparation of normal saline and dextrose normal saline solution. 9
 c) Write a note on nasal drops. 5
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FACULTY OF PHARMACY

B. Pharmacy II – Semester (CBCS) (Main) Examination, July 2017

Subject : Human Anatomy and Physiology - II



Time : 3 hours

Max. Marks : 70

Note : Answer all questions. All questions carry equal marks.

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|---|---|------|
| 1 | a) Explain the physiology of respiration. | 10 |
| | b) Define and explain different types of lung volumes. | 4 |
| | OR | |
| | c) Explain the structure of larynx with a neat labeled diagram and add a note on voice production. | 6+3 |
| | d) Describe how the blood transports oxygen and carbon dioxide? | 5 |
| 2 | a) Describe the structures and functions of the brain. | 10 |
| | b) Explain the structure of neuron. | 4 |
| | OR | |
| | c) What are cranial nerves? Explain the different types of cranial nerves in detail. | 14 |
| 3 | a) Define digestion and explain the process of chemical digestion. | 9 |
| | b) Write structure and functions of salivary gland and add a note on composition of saliva. | 5 |
| | OR | |
| | c) Explain different phases of digestion. | 8 |
| | d) Write about the histology of stomach with a neat labeled diagram. | 6 |
| 4 | a) Explain the actions of the hormones secreted by the anterior and posterior lobes of the pituitary gland. | 10+4 |
| | OR | |
| | b) Name the hormones secreted from the adrenal cortex and explain their functions. | 8 |
| | c) Explain in detail about the role of pancreatic hormones. | 6 |
| 5 | a) Explain the gross and microscopic structure of the kidney with a neat labeled diagram. | 8 |
| | b) What is GFR? Explain various factors affecting GFR. | 6 |
| | OR | |
| | c) Write about the process of spermatogenesis and add a note on sperm structure. | 6+3 |
| | d) Write short notes on In-vitro fertilization. | 5 |
