

FACULTY OF PHARMACY

B. Pharmacy 2/4 II-Semester (Non-CBCS)(Backlog) Examination, December 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 mechanism of Nitration and Sulphonation in Benzene. (6)
 (b) Explain the Nucleophilic substitution in Halobenzenes. (8)
- OR**
- (c) Explain acidity of phenols. (6)
 (d) Write the structure and electrophilic substitution reactions of Anthracene. (8)
- 2 (a) Write in detail about Conformational isomerism with examples. (7)
 (b) What is racemic modification? How do you resolve racemic modification. (7)
- OR**
- (c) Discuss cis-trans isomerism with examples. (7)
 (d) Define and explain Elements of symmetry. (7)
- 3 (a) Write a note on Fischer indole synthesis. (6)
 (b) Discuss the Electrophilic aromatic substitution reactions of Pyridine. (8)
- OR**
- (c) Write any two methods of synthesis of thiophene. (6)
 (d) Discuss the Oxidation reactions of Quinoline and Isoquinoline. (8)
- 4 (a) Outline the method of preparation and important reactions of Pyrazole. (8)
 (b) Write the structure and specific uses of drug compounds containing:
 (i) Phenam (ii) Cepham (iii) Oxazine (6)
- OR**
- (c) Outline the method of preparation and chemical reactions of Isoxazole. (8)
 (d) Write the structure and specific uses of drug compounds containing:
 (i) Thiazole (ii) Diazine (iii) Oxazole (6)
- 5 (a) Write two applications for each of the following:
 (i) Selenium oxide (ii) Lead tetra acetate (iii) N-Bromosucinamide (6)
 (b) Describe mechanism of following reaction (8)
 (i) Oppenauer oxidation (ii) MPV reduction
- OR**
- (c) Explain birch reduction and Arndt-Eistert synthesis. (10)
 (d) Mention two applications of LAH. (4)

FACULTY OF PHARMACY**B. Pharmacy II/IV II – Semester (Non-CBCS) (Backlog) Examination, December 2018****Subject: Environmental Studies****Time: 3 Hours****Max. Marks: 70****Note: Answer all questions. All questions carry equal marks.**

1. a) Discuss about indicators for sustainable development. Give examples. 5
 b) Write about the mineral, forest, land and energy resources, their benefits to society and their misutilization.
- OR**
- c) Write detailed notes on the following
 (i) Conservation and protection of natural resources.
 (ii) Structure and concepts of Ecosystems.
2. a) Explain the following with details
 (i) Biodiversity and species richness 7
 (ii) Medicinal and economic value of biodiversity 7
- OR**
- b) Write notes on the following with details.
 (i) Endangered and Endemic species. 7
 (ii) Hotspots – Mega diversity nation. 7
3. a) Discuss the causes of nuclear hazards and explain the remedial measures for their control. 7
 b) Explain cost benefit analysis for a pharmaceutical process with details.
- OR**
- c) Write detailed notes on the following
 (i) Solid waste management and Urban waste management. 7
 (ii) Waste minimization in manufacturing industry. 7
4. a) Write detailed notes on the following
 (i) Health, sanitation and hygiene. 7
 (ii) Floods, earthquakes and cyclones. 7
- OR**
- b) Explain the following with details
 (i) Urbanization and industrialization 7
 (ii) Waste land reclamation 7
5. a) Write notes on environmental governance and its applications in Pharma industries.
 b) Discuss about direct, indirect and cumulative assessment of impacts on environment 7
- OR**
- c) Write detailed notes on the following
 (i) Issues and enforcement in environmental legislation. 7
 (ii) International conventions on environment and their uses. 7

FACULTY OF PHARMACY**B. Pharmacy 2/4 II-Semester (Non-CBCS)(Backlog) Examination, December 2018****Subject : Pharmacognosy – I****Time : 3 Hours****Max. Marks: 70****Note: Answer all questions. All questions carry equal marks.**

- 1 (a) Define the terms Pharmacognosy, crude drug, Organized and Unorganized drugs. (4)
- (b) Describe in detail about the exogenous factors affecting the cultivation of medicinal plants. (10)
- OR**
- (c) Explain the post harvesting techniques in cultivation of medicinal plants. (9)
- (d) Write a note on mutation. (5)
- 2 (a) List the basic metabolic pathways and explain Isoprenoid biosynthesis. (14)
- OR**
- (b) Write about the (4+5+5)
- (i) Applications of Tracer technique
- (ii) Precursor-product sequence
- (iii) Competitive feeding technique
- 3 (a) Define the term Adulteration, Deterioration, stomatal index, Ash value. (4)
- (b) Write the method of determination of :
- (i) Moisture content (ii) Lycopodium spore method (iii) Crude fiber content (10)
- OR**
- (c) Write a note on good storage practices. (6)
- (d) List the evaluation methods and explain the chemical evaluation technique. (8)
- 4 (a) Write the chemical test for pale catechu, agar, Tragacanth. (4)
- (b) Write a note on chemistry of fixed oils and fats. (4)
- (c) Give the chemical constituents and uses of Castor oil, Black catechu and acacia. (6)
- OR**
- (d) Give the Biological source, preparation and uses of Agar, Alginate and Chaulmoogra oil. (9)
- (e) Write the chemistry of carbohydrates and give the color reactions. (5)
- 5 (a) Give the preparation of Papain, cod liver oil and cotton. (8)
- (b) Give the biological source, chemistry and uses of Honey, cochineal. (6)
- OR**
- (c) Give the biological source, chemistry and uses of Cantherides, Musk and Shark liver oil. (9)
- (d) Write the chemical test for cotton, wool, silk, Honey and gelatin. (5)

FACULTY OF PHARMACY

B. Pharmacy 2/4 II-Semester (Non-CBCS) (Backlog) Examination, December 2018

Subject : Pharmaceutical Biochemistry

Time : 3 Hours

Max. Marks: 70

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

- 1 (a) Explain with a neat diagram biochemical organization of cell. (6)
(b) Discuss the various transport mechanisms across the cell membrane. (8)
- OR**
- (c) Write the concept of free energy. (6)
(d) Describe the method of production of ATP and its biological significance. (8)
- 2 (a) Explain the direct oxidative pathway of carbohydrate. (7)
(b) Discuss the sequence of reactions involved in Glycolysis. (7)
- OR**
- (c) Discuss the pathway of Glucogenesis. Mention the key enzymes responsible. (7)
(d) Write the reactions of Krebs cycle. (7)
- 3 (a) Discuss the various steps involved in the biosynthesis of cholesterol. (7)
(b) What is β -oxidation? Enumerate the pathways of β -oxidation. (7)
- OR**
- (c) Write briefly on : (i) Classification of enzymes (ii) Factors Influencing enzyme activity. (7)
(d) Write notes on : (7)
(i) Activation and deactivation of enzymes
(ii) Co-enzymes
- 4 (a) Describe the Trans-amination. (7)
(b) Write briefly on physical and chemical mutagenesis. (7)
- OR**
- (c) Explain the various DNA repair mechanism. (7)
(d) Write briefly on inborn error in metabolism. (7)
- 5 (a) Describe the principles and methods involved in the quantitative analysis of SGPT and SGOT. (7)
(b) Write the principles and methods involved in the qualitative analysis of urinary Bile salts and Bile pigments. (7)
- OR**
- (c) Write the principle and procedure involved in the estimation of serum Glucose. Write its biological importance. (7)
(d) (i) Describe the principles and methods involved in the quantitative analysis of Creatinine in urine. (7)
(ii) Give the qualitative test for the identification of abnormal constituents of urine. (7)

FACULTY OF PHARMACY

B. Pharmacy 2/4 II-Semester (Non-CBCS) (Backlog) Examination,

November / December 2018

Subject: Pharmaceutical Engineering -II

Time: 3 Hours

Max. Marks: 70

Note: Answer All Questions. All Questions carry Equal Marks.

1. a) Compare and contrast between edge and end runner mills along with diagrams. 8
 b) Mention the problems associated with extraction of crude drugs. 6
OR
 c) Explain the factors affecting the choice of extraction process. 6
 d) Write the construction and working of continuous extraction equipment. 8
- 2) a) Explain the energy and mass balances during evaporation process. 8
 b) Write the construction, advantages and disadvantages of steam jacketed kettle. 6
OR
 c) Differentiate between sieve plate and packed columns. 7
 d) Explain the concept of HETP. 7
- 3) a) Write the construction, working, advantage and disadvantages of rotary drum dryer. 8
 b) Explain the concepts of gas absorption and desorption along with their applications. 6
OR
 c) Mention the different characteristics of crystalline substances. 6
 d) Write the construction, working and advantages of vacuum crystallizer. 8
- 4) a) Classify ion exchange resins and mention their applications. 6
 b) Write the construction and working of kneading mixture. 8
OR
 c) Write the parameters to be considered for selection of mixer. 6
 d) Write the construction and working of mixer for free flowing substances. 8
- 5) a) Explain the concepts of adhesion and cohesion of particles and its significance in compaction. 8
 b) Describe the effect of pressure on relative volume during compaction process. 6
OR
 c) Write the advantages, disadvantages and limitations of automatic process control. 6
 d) Explain the techniques for level measurement. 8

FACULTY OF PHARMACY

B. Pharmacy 2/4 II - Semester (Suppl) Examination, May 2018

Subject: Pharmaceutical Engineering - II

Time: 3 Hours

Max. Marks: 70

Note: Answer All Questions. All Questions carry Equal Marks.

1. a) Mention the IP grades of the powders along with representation of particle size distribution. 7
 b) Classify the sifting equipment along with examples. Write the standards of sieves. 7
OR
 c) Compare and contrast between maceration and percolation process. 6
 d) Write the construction and working of expression equipment with help of diagrams. 8
- 2) a) Classify evaporation equipment with examples 5
 b) Write construction and working of forced circulation evaporator along with benefits and drawbacks. 9
OR
 c) Explain the theory applicable for separation of binary mixtures 6
 d) Describe the construction, working principle and limitations of equilibrium distillation unit. 8
- 3) a) Write the construction, working principle, advantage and disadvantages of lyophilizer. 9
 b) Explain the stages in drying rate curve 5
OR
 c) Describe the steps involved in crystallization process 7
 d) Explain the concept of caking of crystals and its prevention 7
- 4) a) Classify solid-solid mixing equipment 5
 b) Write construction and working of ointment mill along with diagram 9
OR
 c) Classify impellers along with diagrams 6
 d) Write the construction, working principle and advantages of jet mixer 8
- 5) a) Describe the concept of transmission of forces through powders during compaction with help of equations. 7
 b) Explain the techniques to measure the punch forces during compaction 7
OR
 c) Write needs for automatic process control in pharmaceutical field. 6
 d) Explain the approaches to measure vacuum. 8

FACULTY OF PHARMACY

B. Pharmacy 2/4 II - Semester (Suppl) Examination, April 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 mechanism of Nitration and Halogenation in Benzene. 6
 b) What are Poly nuclear aromatic compounds? Discuss in detail the reactions of Naphthalene 8
- OR**
- c) Explain in detail the Effect of substituent on orientation of mono substituted aromatic compounds. 8
 d) Explain in detail $4n+2$ rule and aromaticity. 6
- 2) a) Explain Optical isomerism with examples 6
 b) Explain the following terms: i) Plane polarized light ii) Diastereomers
 iii) Meso structures iv) Enantiomers 8
- OR**
- c) Write a brief note on Conformational isomerism. 6
 d) Explain sequence rules to determine R and S configuration. 8
- 3) a) Define Heterocyclic compounds and Explain systematic nomenclature to name heterocyclic compounds with four examples. 8
 b) Write the structure and specific uses of drug compounds containing
 i) Pyrrole ii) Furan 6
- OR**
- c) Discuss the Electrophillic aromatic substitution reactions of thiophene 8
 d) Outline the method of preparation and important reactions of
 i) Quinoline ii) Isoquinoline. 6
- 4) a) Outline the method of preparation and important reactions of Benzimidazole. 8
 b) Write the structure and specific uses of drug compounds containing
 i) Thiazole ii) Oxazole 6
- OR**
- c) Outline the method of preparation and chemical reactions of Pyrazole. 8
 d) Write the Structure and specific uses of drug compounds containing
 i) Phenam ii) Cepham 6
- 5) a) Write two applications for each of the following 6
 i) LAH ii) Lead tetra acetate iii) N-Bromosucinamide
 b) Describe mechanism of following reaction 8
 i) Oppenauer oxidation ii) Birch reduction
- OR**
- c) Describe mechanism of following reaction 8
 i) Fries migration ii) MPV reduction
 d) Write two applications for each of the following 6
 i) Sodium periodate ii) Selenium oxide iii) Perchloric acid

FACULTY OF PHARMACY**B. Pharmacy 2/4 II-Semester (Suppl.) Examination, May 2018****Subject : Environmental Studies****Time : 3 Hours****Max. Marks: 70****Note: Answer all questions. All questions carry equal marks.**

- 1 (a) Discuss various natural resources and their conservation with examples. (7)
 (b) Explain sustainable development and sustainable life cycle. (7)
- OR**
- (c) Explain with complete details concepts, structure and functions of any eco-system with examples. (14)
- 2 (a) Explain the following:
 (i) Types and levels of biodiversity. (4)
 (ii) Magnitude and distribution of biodiversity. (5)
 (iii) Species richness and indigenous knowledge (5)
- OR**
- (b) Discuss the following:
 (i) Consumptive and productive use. (5)
 (ii) Global and national level of biodiversity (5)
 (iii) Conservation of biodiversity (4)
- 3 (a) Discuss local and global issues and their control measures with respect to water pollution, thermal and nuclear hazards. (14)
- OR**
- (b) Write notes on the following:
 (i) Waste minimization and products from social wastes. (7)
 (ii) Drinking water problems, sanitization, public health and control measures. (7)
- 4 (a) Explain the following:
 (i) Industrialization and green revolution (5)
 (ii) Water harvesting and water shed management (5)
 (iii) Consumerism and waste products (4)
- OR**
- (b) Explain the following:
 (i) Waste land reclamation (4)
 (ii) Earthquakes and cyclone (5)
 (iii) Nuclear accidents and bioterrorism (5)
- 5 (a) Explain the following:
 (i) Hazardous waste rules and municipal solid waste rules. (7)
 (ii) Right to Information Act
- OR**
- (b) Explain the following:
 (i) EIA and EMP (7)
 (ii) Eco Audit and Eco labeling (7)

FACULTY OF PHARMACY

B. Pharmacy II/IV II – Semester (Supple.) Examination, May 2018

Subject: Pharmacognosy – I

Time: 3 Hours

Max. Marks: 70

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

1. a) List the classification methods and explain the chemical and pharmacological classification methods with examples. 9
- b) Explain the mutation and Polyploidy. 5
- OR**
- c) What are plant hormones and give the applications. 5
- d) Discuss the advantages and disadvantages of cultivation of medicinal plants. 9
2. a) List the basic pathways and explain Isoprenoid biosynthesis. 14
- OR**
- b) Write about the (i) Applications of Tracer technique 7+7
(ii) Precursor – product sequence.
3. a) Define the terms Deterioration and adulteration. Explain the types and steps to prevent. 14
- OR**
- b) Define and list the evaluation technique. Explain the physical, microscopical and chemical methods. 14
4. a) Write the chemistry of carbohydrates and color reactions. 4+9
- b) Give the biological source, chemistry and uses of Myrobalan, chaulmoogra oil and castor oil.
- OR**
- c) What are Tannis? Classify and give the color reactions. 6+8
- d) Write the source, preparation, chemistry, uses and color test for Agar.
5. a) Write the source and microscopical characters of cotton, jute and Hemp fibers.
- b) Write the preparation and chemical test for Honey, shark liver oil and Gelatin. 6+8
- OR**
- c) Write the biological source, chemistry and uses of
(i) Cantherides (ii) Cochineal (iii) Bentonite (iv) Wool

FACULTY OF PHARMACY

B. Pharmacy 2/4 II - Semester (Suppl) Examination, April 2018

Subject : Pharmaceutical Biochemistry

Time: 3 Hours

Max. Marks: 70

Note: Answer All Questions. All Questions carry Equal Marks.

1. a) Describe the biochemical organization of cell organelle 8
 b) Discuss the Passive transport across the cell membrane 6
 OR
 c) Explain the concept of free energy? 6
 d) Write a note on energy rich compounds 8
- 2) a) Calculate the ATP yield when glucose is completely oxidized via Glycolysis and Krebs cycle? 8
 b) Discuss about the uronic acid pathway 7
 OR
 c) Explain the various steps of Glycogenolysis? 7
 d) Discuss the biodegradation of AC-COA via TCA cycle; and calculate the total ATP production. 7
- 3) a) What are essential fatty acids. Give their significance? 7
 b) Briefly discuss about the biosynthesis of fatty acids 7
 OR
 c) Explain the beta oxidation of fatty acids? 7
 d) Discuss the metabolism of cholesterol? 7
- 4) a) Explain the Principles involved in biological oxidation? 6
 b) Write the biosynthesis of purines? 8
 OR
 c) Write in detail about the Biosynthesis of RNA? 7
 d) Explain the mechanism involved in the protein synthesis and its regulation? 7
- 5) a) Describe the principles and methods involved in the quantitative analysis of
 i) Blood Creatinine
 ii) Cholesterol.
 iii) Urinary Ketone bodies
 iv) Urinary glucose. 3^{1/2} x 4 = 14
- OR
- b) Describe the principles and methods involved in the quantitative analysis of Blood glucose and phosphates. 7
 c) Describe principle involved in various methods of blood urea determination 7
