

FACULTY OF PHARMACY**B. Pharmacy 2/4 II – Semester (Suppl.) Examination, October / November 2014****Subject: Pharmaceutical Biochemistry****Time: 3 Hours****Max.Marks: 70*****Note: Answer all questions. All questions carry equal marks.***

- 1 (a) Explain an organization of a cell with neat diagram. (7)
(b) Discuss about energy rich compounds and reduction potential. (7)
OR
(c) Explain the concept of free energy. (4)
(d) Write the production of ATP and its biological significance. (10)
- 2 (a) What are enzymes? (2)
(b) Classify enzymes with suitable examples. (4)
(c) Discuss role of an enzyme in biochemical process and mention its applications. (8)
OR
(d) Give an account of glycogenesis. (4)
(e) Describe about citric acid cycle. (10)
- 3 (a) Write a note on fate of dietary lipids. (4)
(b) Explain the β -oxidation of fatty acids. (10)
OR
(c) What are ketone bodies? How they are biosynthesized in the body? (4)
(d) Discuss the biosynthesis of saturated and unsaturated fatty acids. (10)
- 4 (a) Discuss the general metabolic pathway for amino acids. (10)
(b) Write a note on urea cycle. (4)
OR
(c) What are nucleotides? (2)
(d) Discuss the biosynthesis of purine nucleotides. (12)
- 5 (a) Explain the principle involved in quantitative estimation of glucose and creatinine in blood. (10)
(b) Write the principle involved in qualitative and quantitative estimation of glucose in urine. (4)
OR
(c) Write the principle involved in qualitative and quantitative estimation of bile pigments in urine. (10)
(d) discuss the role of cyclic AMP in enzyme activation. (4)

FACULTY OF PHARMACY**B. Pharmacy 2/4 II – Semester (Suppl.) Examination, October / November 2014****Subject: Pharmacognosy - I****Time: 3 hours****Max. Marks: 70****Note: Answer all questions. All questions carry equal marks.**

- 1 a) i) Discuss various methods of classification of crude drugs with suitable examples. 10
 ii) Write advantages and disadvantages of cultivation of medicinal plants. 4
OR
- b) i) Discuss the factors which are given special attention for cultivation of medicinal plants, with suitable examples. 10
 ii) Write a note on collection and processing of crude drugs. 4
- 2 a) i) Write a note on
 A) Precursor-product sequence
 B) Competitive feeding 7
 ii) Explain biosynthesis of isoprenoid compounds. 7
OR
- b) i) Describe Shikimic acid pathway of biosynthesis. 7
 ii) Explain tracer technique employed in biosynthetic pathways. 7
- 3 a) i) Define drug adulteration. Write about different types of adulteration in crude drugs, with suitable examples. 7
 ii) What is meant by drug evaluation? Write about physical evaluation of crude drugs. 7
OR
- b) i) What is a pest? Write a note on pest control. 6
 ii) Explain the microscopic evaluation of crude drugs. 8
- 4 a) i) Write biological source, chemical constituents and uses of
 A) Agar b) Isabgol c) Theobroma oil D) Myrobalan 10
 ii) Write a short note on fixed oils. 4
OR
- b) i) Write biological source, chemical constituents and uses of
 A) Tragacanth B) Starch C) Chaulmoogra oil D) Spermaceti 10
 ii) Write a note on Tannins. 4
- 5 a) i) Discuss pharmacognostic study of cotton. 8
 ii) Write short notes on any two mineral origin drugs. 6
OR
- b) i) Write pharmacognostic study of shark liver oil. 8
 ii) Write short notes on any two drugs belonging to the class of proteins and enzymes. 6

FACULTY OF PHARMACY**B.Pharmacy 2/4 II - Semester (Supplementary) Examination, October/November 2014****Subject : Pharmaceutical Engineering - II****Time : 3 Hours****Max. Marks: 70*****Note: Answer all questions. All questions carry equal marks.***

- 1 (a) Explain any two screening equipment with advantages and applications. (7)
(b) Describe the construction and working of fluid energy mill with help of diagram. (7)
OR
(c) Explain the construction and working of Rotocel extractor. (7)
(d) Describe the construction and working principle of double cone classifier. (7)
- 2 (a) Explain the factors affecting evaporation. (6)
(b) Describe the construction and working of forced circulation evaporator. (8)
OR
(c) What is mean free path and mention its significance? (4)
(d) Explain the construction and working of centrifugal molecular skills with neat diagram. (10)
- 3 (a) What is EMC and FMC? Mention their significance. (4)
(b) Explain the principle involved and construction of freeze dryer. (10)
OR
(c) Explain construction and working of fluidized bed drying. (7)
(d) Describe the principle involved and construction u/s Swenson walker implizer. (7)
- 4 (a) Describe the factors influencing selection of mixer. (6)
(b) Write the construction and working of sigma blade mixer with neat sketch. (8)
OR
(c) Classify mixing equipment with examples. (5)
(d) Mention the objectives of mixing. (2)
(e) Write the construction and working principle of triple roller mill. (7)
- 5 (a) What are the different punch forces involved during compaction? (5)
(b) How do you measure the punch forces along with working of LVDT (Linear Variable Differential Transducer). (9)
OR
(c) What is feed forward and feed back mechanisms in automatic process control? (5)
(d) Describe the measurement techniques for process variable temperature and level. (9)

FACULTY OF PHARMACY**B.Pharmacy 2/4 II-Semester (Supplementary) Examination, October/November 2014****Subject : Environmental Studies****Time : 3 Hours****Max. Marks: 70*****Note: Answer all questions. All questions carry equal marks.***

- 1 (a) Describe the structure of ecosystem. (6)
 (b) Explain the role of an individual in conservation of natural resources. (8)
OR
 (c) Write notes on the following: (4 + 6 + 4)
 (i) Land degradation (ii) Over exploitation of Minerals
 (iii) Sustainable life styles
- 2 (a) Explain the medicinal and economic value of biodiversity. (8)
 (b) Define hot spots and discuss about Indian hot spots. (6)
OR
 (c) Explain the following: (4 + 6 + 4)
 (i) Genetic diversity (ii) Biosphere reserves
 (iii) Endemic species of India
- 3 (a) Explain the following briefly. (8 + 6)
 (i) Climate change and globalwarming (ii) Nuclear hazards
OR
 (b) Write briefly on the following:
 (i) Effects of air pollutants on materials and plants (8)
 (ii) Waste recycle and reuse (6)
- 4 (a) Explain the effects of human activities on the quality of environment. (8)
 (b) Discuss about floods, cyclones and land slides. (6)
OR
 (c) Write notes on the following : (4x3.5)
 (i) Value education (ii) Wasteland reclamation
 (iii) Rainwater harvesting (iv) Green revolution
- 5 (a) Explain the following: (5 + 4 + 5)
 (i) Forest conservation Act (ii) Ramsar convention
 (iii) Wild life protection Act
OR
 (b) Write briefly on the following: (5 + 4 + 5)
 (i) Negative and positive impacts of EIA (ii) Ecolabeling
 (iii) Right to information Act

FACULTY OF PHARMACY**B.Pharmacy 2/4 II - Semester (Supplementary) Examination, October/November 2014****Subject : Pharmaceutical Organic Chemistry – II****Time : 3 Hours****Max. Marks: 70*****Note: Answer all questions. All questions carry equal marks.***

- 1 (a) (i) Explain in detail Huckel $4n + 2$ rule and Aromaticity. (7)
 (ii) What are polynuclear aromatic compounds? Discuss in detail the reactions of Anthracene. (7)
- OR**
- (b) (i) Describe the mechanism of Nitration and Friedel Craft methylation of benzene. (10)
 (ii) How Halobenzene undergo substitution reaction? Explain. (4)
- 2 (a) (i) Explain optical isomerism with examples. (6)
 (ii) Explain the following terms: (A) Plane polarized light (B) Diastereomers (C) Meso structures (D) Enantiomers (8)
- OR**
- (b) (i) Write a brief note on conformational isomerism. (6)
 (ii) Explain sequence rules to determine R and S configuration. (8)
- 3 (a) (i) Compare the aromaticity of pyrrole, furan and thiophene. (6)
 (ii) Discuss the reactions of pyridine. (8)
- OR**
- (b) (i) Outline the method of preparations of (A) Quinoline (B) Indole (8)
 (ii) Write the structures and medicinal uses of compounds bearing (A) Quinoline (B) Isoquinoline (C) Acridine (6)
- 4 (a) (i) Discuss any two methods of preparation and reactions of Imidazole. (8)
 (ii) Give any one method of preparation of (A) Benzimidazole (B) Oxazole (C) Phenothiazine (6)
- OR**
- (b) (i) Discuss any two method of preparation of thiazole and pyrazole. (8)
 (ii) Write the structures and specific uses of the following: (6)
 (A) Oxazine (B) Triazine (C) Triazole
- 5 (a) (i) Write any two applications of each of the following: (6)
 (A) Lithium Aluminium Hydride (B) Lead Tetra Acetate (C) Selenium oxide
 (ii) Describe the mechanism of following reactions (8)
 (A) Birch reduction (B) MPV Reduction
- OR**
- (b) (i) Explain Oppenauer oxidation and Beckmann-Rearrangement and their applications in synthesis. (10)
 (ii) Mention any two applications of perchloric acid (4)

FACULTY OF PHARMACY**B. Pharmacy 2/4 II – Semester (Main) Examination, March 2014****Subject : Pharmaceutical Bio-Chemistry****Time : 3 hours****Max. Marks : 70****Note : Answer all questions. All questions carry equal marks.**

- 1 a) Describe the different mechanisms involved in the transport of metabolites through the biological membranes. 5
 b) Write an account of high-energy compounds metabolism. 4
 c) Explain the production of ATP. 5
OR
 d) Write the biological significance of ATP. 4
 e) How will you determine equilibrium constant and reduction potential? 5
 f) Explain the mechanism of transport process across cell membrane. 5
- 2 a) How do you classify enzymes? 3
 b) Explain the mechanism of action of enzymes with suitable examples. 5
 c) Discuss clinical applications of enzymes with relevant examples. 6
OR
 d) Write a brief account of glycolysis. 6
 e) Define gluconeogenesis and glycogenolysis. 4
 f) Explain the role of sugar nucleotides in biosynthesis. 4
- 3 a) Define fatty acids with examples. 2
 b) Describe the β -oxidation of fatty acids. 6
 c) Write about ω -oxidation and α -oxidation of fatty acids. 6
OR
 d) Write in detail about metabolism of cholesterol. 9
 e) Explain briefly on fate of dietary lipids. 5
- 4 a) Describe the general metabolic pathways of amino acids. 6
 b) Explain the urea cycle in detail. 8
OR
 c) Discuss the different application of recombinant DNA technology. 8
 d) Explain the mechanism of protein synthesis. 4
 e) Define biological oxidation. 2
- 5 a) Write the principle and method for quantitative and qualitative analysis of blood for
 i) SGPT ii) Urea iii) Creatinine 14
OR
 b) Write the principle and method for quantitative and qualitative analysis of urine for
 i) Bile salts ii) Albumin iii) Ketone bodies 14

FACULTY OF PHARMACY**B. Pharmacy 2/4 II – Semester (Main) Examination, March 2014****Subject : Pharmaceutical Engineering – II****Time : 3 hours****Max. Marks : 70****Note : Answer all questions. All questions carry equal marks.**

- 1
 - a) Explain construction of diffusion batteries and mention principle of working with the help of diagram. 7
 - b) Write the construction and working of Podbielniak extractor. 7

OR

 - c) Differentiate between cyclone separator and air separator. 7
 - d) How do you determine particle size and its distribution for the preparation of pharmaceutical powders? 7
- 2
 - a) Explain energy and mass transfer relationships during evaporation. 7
 - b) Explain with neat sketch, the construction and working of climbing film evaporator. 7

OR

 - c) Distinguish between evaporation and distillation. 4
 - d) Explain theory of rectification. 4
 - e) Write construction of sieve plate and packed columns. 6
- 3
 - a) Explain the stages involved in drying rate curve. 7
 - b) Describe the construction and principle of working of spray dryer with help of diagram. 7

OR

 - c) Describe the Meir's super saturation theory and mention its limitations. 6
 - d) Explain the construction and working of Krystal crystallizer. 7
- 4
 - a) What is mixing index? Write the construction and working of zigzag mixer. 8
 - b) Classify impellers and mention their characteristics. 6

OR

 - c) Classify Ion exchange resins with examples. Mention their principles and applications. 7
 - d) Explain the construction and working of sigma blade mixer. 7
- 5
 - a) What is automatic process control and mention their applications?
 - b) Describe the measurement techniques for process variables such as pressure and vacuum.

OR

 - c) Explain the factors effecting strength of granules and strength of tablets.

FACULTY OF PHARMACY**B. Pharmacy 2/4 II-Semester (Main) Examination, April 2014****Subject : Pharmacognosy – I****Time : 3 Hours****Max. Marks: 70*****Note: Answer All questions. All questions carry equal marks.***

- 1 (a) (i) Discuss various methods of classification of crude drugs with suitable examples. (10)
 (ii) What is cultivation? Write advantages and disadvantages of cultivation. (4)
OR
- (b) (i) Explain the applications of plant hormones. (8)
 (ii) Write a note on treatment of crude drugs after collection with suitable examples. (6)
- 2 (a) Explain the techniques employed in biosynthetic pathways. (14)
OR
- (b) (i) Discuss the role of shikimic acid pathway in the biogenesis of secondary metabolites. (7)
 (ii) Write a note on isoprenoid biosynthesis. (7)
- 3 (a) (i) Discuss the quality control of crude drugs. (8)
 (ii) Write about various types of adulteration occurring in crude drugs with suitable examples. (6)
OR
- (b) (i) Enumerate various environmental and biological factors which cause drug deterioration. (10)
 (ii) Write a note on leaf constants. (4)
- 4 (a) (i) Write biological source, chemical constituents and uses of (10)
 (A) Agar (B) Starch (C) Acacia (D) Bees Wax
 (ii) What are tannins? Classify with suitable examples. (4)
OR
- (b) (i) Write pharmacognostic study of castor oil. (10)
 (ii) What are carbohydrates? Classify with examples. (4)
- 5 (a) (i) Write pharmacognostic study of cotton. (10)
 (ii) Write a note on honey. (4)
OR
- (b) (i) Write biological source, chemical constituents and uses of (10)
 (A) Jute (B) Wool (C) Sharkliveroil (D) Musk
 (ii) Write a note on Pepsin. (4)

FACULTY OF PHARMACY**B. Pharmacy II-Year II-Semester (Main) Examination, April 2014****Subject : Environmental Studies****Time : 3 Hours****Max. Marks: 70*****Note: Answer All questions. All questions carry equal marks.***

- 1 (a) Discuss briefly about land and forest resources with suitable examples. (7)
 (b) Write briefly about sustainable life cycle and their importance. (7)
OR
 (c) Discuss in detail about conservation of natural resources. (7)
 (d) Write briefly about sustainability theory and practices. (7)
- 2 (a) Explain the following:
 (i) Consumptive and productive use of biodiversity (6)
 (ii) Insitu conservation of biodiversity (4)
 (iii) Indigenous knowledge (4)
OR
 (b) Write notes on the following:
 (i) Global, national and local levels of biodiversity (8)
 (ii) Distribution and magnitude of biodiversity (6)
- 3 (a) Write notes on the following:
 (i) Marine pollution and control (5)
 (ii) Ground water depletion (5)
 (iii) Sanitation and public health (4)
OR
 (b) Explain briefly the following:
 (i) Manufacturing industry - pollution minimization (5)
 (ii) Process development - alternate methods and routes (5)
 (iii) Nuclear hazards (4)
- 4 (a) Write notes on the following:
 (i) Problems of poverty and food (4)
 (ii) Human activities and effects on environment (6)
 (iii) Hygiene and sanitation (4)
OR
 (b) Explain the following briefly.
 (i) Urbanization and its impacts on environment (5)
 (ii) Disaster management (4)
 (iii) Waste land reclamation (5)
- 5 (a) Write short notes on the following:
 (i) ECO Audit (4)
 (ii) Environmental regulations (6)
 (iii) Municipal solid waste management (4)
OR
 (b) Explain the following briefly
 (i) ISO : 14,000 and series (5)
 (ii) Environmental legislation (6)
 (iii) Kyoto protocol (3)

FACULTY OF PHARMACY**B. Pharmacy 2/4 II – Semester (Main) Examination, March 2014****Subject : Pharmaceutical Organic Chemistry – II****Time : 3 hours****Max. Marks : 70****Note : Answer all questions. All questions carry equal marks.**

- 1 a) i) Write the method of preparation and important chemical reactions of anthracene. 6
 ii) Explain the mechanism of electrophilic substitution reactions. 8
OR
 b) i) Discuss in detail the reactions of phenols. 8
 ii) Write a note on nucleophilic substitution in halobenzenes. 6
- 2 a) i) Explain relative configuration of optically active compounds. 6
 ii) Define with examples A) enantiomers B) diastereomers 8
 Explain briefly plane of symmetry. 8
OR
 b) i) What is racemic modification? How do you resolve racemic modification. 7
 ii) What is cis-trans isomerism? How do you assign configuration to E and Z isomers? 7
- 3 a) i) Draw the structure of thiophene and explain electrophilic substitution reactions of thiophene with examples. 8
 ii) Outline the method of preparation and two important chemical properties of Indole. 6
OR
 b) i) Describe any one method for preparation of quinoline and isoquinoline. 10
 ii) Explain why electrophilic substitution takes place at 2 and 5 position in Furan. 4
- 4 a) i) Outline the method of preparation and important chemical reactions of pyrazoles. 8
 ii) Draw the structure and uses of compounds containing A) Phenam B) Cepham C) Oxazine 6
OR
 b) i) Write the ring structure and nomenclature of following heterocyclic compounds. 6
 A) Benzofuran B) Dioxane C) Tetrazole
 ii) Write any one method of preparation of following : 8
 A) phenothiazine B) benzimidazole
- 5 a) i) Write two applications of each of the following : 6
 A) selenium oxide B) sodium periodate C) perchloric acid
 ii) Describe the mechanism of following reaction 8
 A) Hoffman's hypobromite reaction B) Oppenauer oxidation
OR
 b) i) Explain Birch reduction and Arndt-Eistert synthesis. 10
 ii) Mention two important applications of LAH. 4
