

FACULTY OF PHARMACY

B. Pharmacy 2/4 II – Semester (Suppl.) Examination, November 2016

Subject: Pharmaceutical Engineering – II

Time: 3 Hours

Max. Marks: 70

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

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|---|---|----|
| 1 | a) Explain the principle and working of colloid mill with the help of diagram. | 7 |
| | b) Write the construction and working of bag filter and mention its applications. | 7 |
| | OR | |
| | c) Describe the factors influencing extraction process. | 7 |
| | d) Write the construction and working of Rotocel extractor. | 7 |
| 2 | a) Explain the construction and working of multiple effect evaporator along with its advantages. | 7 |
| | b) Write the principle of flash distillation process along with the advantages and drawbacks. | 7 |
| | OR | |
| | c) Explain theory and working of film forming evaporator. | 9 |
| | d) Describe principle and significance of Azeotropic distillation. | 5 |
| 3 | a) Write the construction and working of fluid bed dryer. | 7 |
| | b) Write the principle and working of rotary drum dryer with the help of diagram. | 7 |
| | OR | |
| | c) Explain the theory of crystallization along with its applications. | 7 |
| | d) Describe the construction and working of Swenson Walker crystallizer along with its advantages. | 7 |
| 4 | a) Compare and contrast jet mixer and air jet mixer with help of diagrams. | 7 |
| | b) Write the construction and working of Silverson emulsifier. | 7 |
| | OR | |
| | c) Write the principle and working of planetary mixer. | 7 |
| | d) Write the construction and working of continuous mixing equipment with the help of diagram. | 7 |
| 5 | a) Explain the significance of automatic process control and mention the role of computers for its control. | 7 |
| | b) Describe the measurement devices for temperature control. | 7 |
| | OR | |
| | c) Discuss about various variables in tablet preparation. | 14 |



FACULTY OF PHARMACY

B. Pharmacy 2/4 II – Semester (Suppl.) Examination, October 2016

Subject: Pharmaceutical Biochemistry

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) Explain the concept of free energy. 4
 c) Mention the various high energy compounds in metabolism with examples. 5
OR
 d) Describe the mechanism of active transport. 7
 e) Explain the production of ATP and mention the biological significance of ATP. 7
- 2 a) Define enzyme. Classify the enzymes with suitable examples. 5
 b) Discuss the competitive inhibition of enzymes with relevant examples. 5
 c) Mention the clinical applications of enzymes. 4
OR
 d) Explain the reactions of citric acid cycle. 7
 e) Describe the reactions involved in gluconeogenesis. 7
- 3 a) Discuss about β – oxidation of fatty acids. 7
 b) Explain the biosynthesis of fatty acids. 7
OR
 c) Describe the Cholesterol metabolism. 7
 d) Write short notes on:
 i) Synthesis of ketone bodies 4
 ii) Essential fatty acids 3
- 4 a) Explain the following terms: 3x2=6
 i) Biological oxidation
 ii) Nitrogen balance
 iii) Electron transport
 b) Discuss about the formation of Uric acid. 8
OR
 c) Explain the biosynthesis of DNA. 8
 d) Mention the various applications of recombinant DNA technology. 6
- 5 a) Explain the principle and method for qualitative and quantitative analysis of blood glucose. 8
 b) Describe the role of cyclic AMP in enzyme activation. 6
OR
 c) How SGPT and SGOT are quantitatively assessed? 8
 d) Explain mode of detection of ketone bodies and albumin in Urine. 6

FACULTY OF PHARMACY

B. Pharmacy 2/4 II – Semester (Suppl.) Examination, November 2016

Subject: Environmental Studies

Time: 3 Hours

Max.Marks: 70

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

- 1 a) State and explain sustainability theory and practice. Discuss its importance. 7
 b) Discuss the natural resources and their importance. Give examples. 7
OR
 c) Explain the following:
 i) Energy resources – over exploitation. 7
 ii) Conservation of natural resources. 7
- 2 a) Write a detailed note on medicinal and economic value of biodiversity. 7
 b) Explain sustainability development – its relation with nano and biotechnology. 7
OR
 c) Write detailed note on the following:
 i) Global – National – Local levels of biodiversity. 8
 ii) Consumptive and productive use of biodiversity. 6
- 3 a) Explain causes, reasons and remedial measures of thermal pollution. Discuss any case study. 7
 b) Discuss the waste minimization aspects in a manufacturing industry with examples. 7
OR
 c) Discuss the following with details:
 i) Nuclear hazards – problems and perspectives. 7
 ii) Control measures for urban and industrial wastes. 7
- 4 a) Narrate few social issues that are being faced by the society. How do you provide solutions? Explain. 8
 b) Discuss sanitation and hygiene and the role of public. Add a note on Swachha Bharath Programme. 6
OR
 c) Write a detailed note on the following:
 i) Resettlement and Rehabilitation of people. 7
 ii) Earth-quakes and cyclones – management. 7
- 5 a) Explain the features of Environmental Protection Act. 7
 b) ISO – 14000 – Significance and importance. 7
OR
 c) Discuss the following with details:
 i) Environmental governance 5
 ii) EIA notifications 5
 iii) International Conventions. 4

FACULTY OF PHARMACY

B. Pharmacy 2/4 II – Semester (Suppl.) Examination, November 2016

Subject: Pharmacognosy – I

Time: 3 Hours

Max.Marks: 70

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

- 1 a) Write about good storage practices. 6
 b) What are the plant hormones and discuss the importance in cultivation of medicinal plants. 8
- OR**
- c) Write a note on mutation and hybridization. 10
 d) Write advantages of cultivation of medicinal plants. 4
- 2 a) What are basic metabolic pathways and write their importance. Describe in detail about Shikimic acid pathway. 14
- OR**
- b) Explain different tracer techniques in biosynthesis. 10
 c) Write a note on Scintillation counters. 4
- 3 a) Discuss the living and non-living factors responsible for deterioration of crude drugs and steps to prevent the deterioration. 14
- OR**
- b) Determination of moisture content. 4
 c) Microscopical evaluation of crude drugs 5
 d) Determination of volatile content. 5
- 4 a) Write the biological source, chemical constituents and uses of
 i) Myrobalan ii) Chalmogra oil iii) Isabgol 9
 b) Write about alginates. 5
- OR**
- c) What are lipids and classify with examples. 5
 d) Give the source, chemical constituents and uses of
 i) Linseed ii) Castor oil iii) Pale catechu 9
- 5 a) What are proteins and classify with examples. 4
 b) Write the preparation of
 i) Cotton ii) Papain iii) Cod liver oil iv) Honey 10
- OR**
- c) Discuss the importance's of plant fibers. Describe the sources and diagnostic characters to identify the cotton, jute, silk and wool. 10
 d) Write a note on gelatin. 4

FACULTY OF PHARMACY

B. Pharmacy 2/4 II – Semester (Suppl.) Examination, October 2016

Subject: Pharmaceutical Organic Chemistry – II

Time: 3 Hours

Max.Marks: 70

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

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|---|---|----|
| 1 | a) Write the mechanism of nitration in benzene. | 7 |
| | b) Write the method of preparation and chemical reactions of naphthalene. | 7 |
| | OR | |
| | c) Explain in detail $4n+2$ Huckel rule and aromaticity. | 7 |
| | d) Explain the nucleophilic substitution in Halobenzene. | 7 |
| 2 | a) Write a brief note on conformational isomerism. | 6 |
| | b) Explain the following terms: | 8 |
| | i) Plane polarized light ii) Diastereomers iii) Enantiomers iv) Meso compounds | |
| | OR | |
| | c) Explain sequence rules to determine R and S configuration. | 7 |
| | d) Discuss cis-trans isomerism with examples. | 7 |
| 3 | a) Compare the aromaticity of pyrrole, furan and thiophene. | 6 |
| | b) Discuss the reactions of pyridine. | 8 |
| | OR | |
| | c) Outline the method of preparation and reactions of quinoline and isoquinoline. | 10 |
| | d) Write the structure and specific uses of two medically important compounds representing each of following heterocyclic system i) Acridine ii) Furan. | 4 |
| 4 | a) Discuss any two methods of preparation and reactions of imidazole. | 8 |
| | b) Write the structure and specific uses of the following: | 6 |
| | i) Oxazine ii) Triazine iii) Triazole | |
| | OR | |
| | c) Outline the method of preparation and chemical reactions of pyrazole. | 8 |
| | d) Write the structure and specific uses of the compounds containing | |
| | i) Cephem ii) Phenam iii) Thiazole | 6 |
| 5 | a) Describe the mechanism of following reactions: | 8 |
| | i) MPV reduction ii) Birch reduction | |
| | b) Write two applications for each of the following: | 6 |
| | i) Lead tetra acetate ii) Sodium periodate | |
| | OR | |
| | c) Describe the mechanism of following reaction. | 8 |
| | i) Fries migration ii) Arndt-Eistert synthesis | |
| | d) Write two applications of each of the following: | 6 |
| | i) N-Bromosuccinimide ii) Perchloric acid | |

FACULTY OF PHARMACY

B. Pharmacy 2/4 II-Semester (Main) Examination, April 2016

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 Electrophillic substitution reactions in Benzene. (7)
 (b) Write the method of preparation and chemical reactions of Anthracene. (7)
OR
 (c) Explain the nucleophilic substitution in Halo benzenes. (7)
 (d) Explain the acidity of Phenols with examples. How do you convert Phenol to Salicylaldehyde. (7)
- 2 (a) What is racemic modification? How do you resolute racemic modification. (7)
 (b) Explain Opitcal isomerism with examples. (7)
OR
 (c) Define and explain elements of symmetry. (7)
 (d) Discuss Cis-trans isomerism with examples. (7)
- 3 (a) Explain why Electrophillic aromatic substitution reaction takes place at '3' position in pyridine. (4)
 (b) Write any two methods of synthesis of thiophene. (5)
 (c) Write a note on Fischer indole synthesis. (5)
OR
 (d) Discuss the reactions of Pyridine. (8)
 (e) Discuss the oxidation reactions of quinoline and isoquinoline. (6)
- 4 (a) Outline the method of preparation and chemical reactions of Benzimidazole. (8)
 (b) Write the structure and specific uses of the drug compounds containing:
 (i) Thiazole (ii) Diazine (iii) Oxazole
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 (iii) Triazole
- 5 (a) Describe the mechanism of the following reactions: (8)
 (i) Beckmann rearrangement (ii) Hoffman rearrangement
 (b) Write two applications for each of the following : (6)
 (i) Lead tetra acetate (ii) Selenium oxide
OR
 (c) Describe the mechanism of following reactions: (8)
 (i) Fires migration (ii) Amdt-Eistert synthesis
 (d) Write two applications of each of the following: (6)
 (i) N.Bromosuccinimide (ii) Perchloric acid

FACULTY OF PHARMACY**B. Pharmacy 2/4 II-Semester (Main) Examination, April 2016****Subject : Pharmaceutical Engineering - II****Time : 3 Hours****Max. Marks: 70****Note: Answer all questions. All questions carry equal marks.**

- 1 (a) Discuss the principle, construction, working and applications of ball mill with diagram. (10)
 (b) Discuss the factors affecting the efficiency of extraction. (4)
OR
 (c) Write the procedure for determination of particle size of powders and its size distribution using sieves. (8)
 (d) Write the construction, and working of cyclone separator. (6)
- 2 (a) Write the factors affecting over all heat transfer coefficient. (8)
 (b) Explain the functioning of sieve plate and packed column in distillation with a neat sketch. (6)
OR
 (c) Explain the principle, construction and applications of forced circulation evaporator. (6)
 (d) Discuss about : (i) HETP (ii) Scaling (8)
- 3 (a) Write the principle, construction and working of a crystallizer that works on the basis of adiabatic evaporative cooling. (6)
 (b) Discuss the factors which effect the formation and growth of crystals. (4)
 (c) Explain the two phase flow through packed towers in gas absorption. (4)
OR
 (d) Discuss Mier's super saturation theory and its limitations. (8)
 (e) What is bound water, unbound water, EMC and FMC? (6)
- 4 (a) Write the principle applications and types of Ion exchange resins. (8)
 (b) Write the mixers used for mixing of viscous masses and explain about any one. (6)
OR
 (c) Write about sigma blade mixer and planetary mixer with diagrams. (4+4)
 (d) Discuss about the different types of mixing devices for liquid-liquid mixing. (6)
- 5 (a) What is compaction? What are the different forces involved in compaction and how to measure them? (14)
OR
 (b) Describe briefly the different devices available for measuring temperature. (8)
 (c) Explain the factors which influence the strength of granules. (6)

FACULTY OF PHARMACY**B. Pharmacy 2/4 II-Semester (Main) Examination, April 2016****Subject : Pharmaceutical Biochemistry****Time : 3 Hours****Max. Marks: 70****Note: Answer all questions. All questions carry equal marks.**

- 1 (a) Explain Biochemical organization of the cell with a neat diagram. (6)
 (b) Discuss the various transport mechanisms across cell membrane. (8)
OR
 (c) Define the following terms: (3x2)
 (i) Free energy
 (ii) Equilibrium constant
 (iii) Reduction potential
 (d) Explain the production of ATP and its biological significance. (8)
- 2 (a) Define the following: (3x2)
 (i) Enzymes
 (ii) Isoenzymes
 (iii) Coenzymes
 (b) Explain kinetics, mechanism of action and inhibition of enzymes. (8)
OR
 (c) Write the sequence of reactions of Glycolysis. (7)
 (d) Explain Pentose Phosphate Pathway. (7)
- 3 (a) Describe the biosynthetic pathway for cholesterol and its regulation. (7)
 (b) Explain the Oxidation of Unsaturated fatty acids. (7)
OR
 (c) Write short note on: (2x3)
 (i) Ketone bodies
 (ii) Phospholipids
 (d) Describe the biosynthesis of fatty acids. (8)
- 4 (a) Write briefly on : (2x3)
 (i) Nitrogen balance
 (ii) Biological Oxidation
 (b) Describe the biosynthesis of Purines and Pyrimidines. (8)
OR
 (c) Explain the biosynthesis of DNA. (7)
 (d) Discuss the mechanism of DNA repair. (4)
 (e) Mention the various inborn errors in metabolism. (3)
- 5 (a) Explain the principle and method for Qualitative and Quantitative analysis of blood for
 (i) SGPT (ii) SGOT (iii) Urea (iv) Albumin (4x3½)
OR
 (b) Write short notes on Ketone bodies. (6)
 (c) Explain the principle involved in the Quantitative estimation of bile pigments, bile salts and albumin in Urine. (8)

FACULTY OF PHARMACY

B. Pharmacy 2/4 II-Semester (Main) Examination, April 2016

Subject : Pharmacognosy - I

Time : 3 Hours

Max. Marks: 70

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

- 1 (a) Discuss in detail about the exogenous and endogenous factors affecting the cultivation of medicinal plants with suitable examples. (14)
- OR**
- (b) Write a note on polyploidy. (4)
- (c) Write about storage conditions for crude drugs. (6)
- (d) Discuss about auxins. (4)
- 2 (a) Describe Isoprenoid biosynthesis and its importance. (14)
- OR**
- (b) Explain different tracer techniques in biosynthesis.
- 3 (a) Describe different types of adulteration in crude drugs, with suitable examples and suggest measures to prevent the adulteration. (10)
- (b) Write a note on lycopodium spores method of analysis. (4)
- OR**
- (c) Write about :
- (i) Determination of moisture content. (4)
- (ii) Quantitative microscopy (5)
- (iii) Chemical evaluation (5)
- 4 (a) Define and classify the tannins. Give the color reaction of tannins. (5)
- (b) Describe the pharmacognostic study of Agar. (9)
- OR**
- (c) Define and classify the carbohydrates. Give the color reactions of carbohydrates. (5)
- (d) Write the source, chemical constituents and uses of (9)
- (i) Olive oil (ii) Black catechu (iii) Tragacanth
- 5 (a) Give the sources, preparation and pharmaceutical importance of (5+5+4)
- (i) Cod liver oil (ii) Cotton (iii) Pepsin
- OR**
- (b) What are proteins and classify with examples? (4)
- (c) Discuss the importance of plant fibers. Describe the sources and diagnostic character to identify the Cotton, Jute, Silk and Wool. (10)

FACULTY OF PHARMACY

B. Pharmacy 2/4 II-Semester (Main) Examination, April 2016

Subject : Environmental Studies

Time : 3 Hours

Max. Marks: 70

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

- 1 (a) Discuss about forest resources and conservation.
(b) Explain the equitable use of resources for sustainable life styles.
OR
(c) What are the natural resources? Discuss about conservation of natural resources.
(d) Describe the abiotic and biotic components of an ecosystem.
- 2 (a) Explain the following:
(i) Distribution of biodiversity
(ii) Medicinal value of biodiversity
OR
(b) Write notes on the following:
(i) Threats of biodiversity
(ii) Endemic species of India
- 3 (a) Write notes on the following:
(i) Global warming
(ii) Acid rain
(iii) Ozone layer
OR
(b) Explain the following:
(i) Green house gases
(ii) Recycle and Reuse of wastes
(iii) Effects of soil pollution
- 4 (a) Discuss about the social issues concerned with the
(i) Population explosion
(ii) Poor quality or lack of education
(iii) Urbanization
OR
(b) (i) Resettlement and Rehabilitation of people
(ii) Nuclear accidents
(iii) Bioterrorism
- 5 (a) Write short notes on the following:
(i) Scope of EIA
(ii) ECO Audit
(iii) Kyoto protocol
OR
(b) Explain the following:
(i) Forest Conservation Act
(ii) Hazardous Waste Rules
(iii) EIA notification