

FACULTY OF PHARMACY

B. Pharmacy 2/4 II-Semester (Suppl.) Examination, November 2013

Subject : Pharmaceutical Biochemistry

Time: 3 Hours

Max.Marks: 70

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

- 1.(a) Write about energy rich compound and reduction potential. 6
 (b) Explain the mechanism of passive transport across the cell membrane. 8
OR
 (c) Write about the production of ATP and its significance. 8
 (d) Explain the mechanism of active transport. 6
- 2.(a) Describe the metabolism of pentose phosphate pathway. 8
 (b) Write about gluco neogenesis. 6
OR
 (c) Write about glycolysis. 8
 (d) Mention the factors affect the enzyme action. 6
- 3.(a) What are essential fatty acids? 2
 (b) What is the fate of dietary lipids? 4
 (c) Discuss about α -oxidation of fatty acids. 8
OR
 (d) Explain the biosynthesis of ketone bodies. 7
 (e) Explain the role of cholesterol in humans. 7
- 4.(a) What are nucleosides? 3
 (b) Mention the different types of RNA and their biological role. 7
 (c) Write a note on transcription. 4
OR
 (d) Explain the role of various enzymes in biological oxidation. 5
 (e) Mention the different application of recombinant DNA. 4
 (f) Explain the formation of uric acid. 5
- 5.(a) Write the principle involved in the qualitative and quantitative analysis of blood for
 (i) urea ii) albumin 14
OR
 (b) Write the principle involved in the qualitative and quantitative analysis of urine for
 (i) glucose (ii) bile pigments. 14

FACULTY OF PHARMACY

B. Pharmacy II Year II-Semester (Suppl.) Examination, November 2013

Subject : Pharmaceutical Engineering – II

Time: 3 Hours

Max.Marks: 70

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

- 1.(a) Describe the principle, working and applications of hammer mill with a neat diagram. 6
 (b) Explain the laws of settling. 4
 (c) What is leaching and explain the mechanism of leaching? 4
OR
 (d) Discuss the factors affecting the choice of extraction. 6
 (e) With the help of neat diagram explain the principle, construction, working of bag filters. 8
- 2.(a) Explain the principle and application of molecular distillation and steam distillation. 8
 (b) Explain the construction, working and application of dryers used for slurries with neat sketch. 6
OR
 (c) Give different mass transfer operations and define them. 3
 (d) Write about HETP. 3
 (e) Give the classification of evaporators and explain the construction and working of forced film evaporator 8.
- 3.(a) Explain the mechanism of development of crystals and write Miers super saturation theory and its limitations. 7
 (b) Explain the principle, process and special applications of freeze drying. 7
OR
 (c) Describe an equipment which works on the principle of adiabatic evaporation. 6
 (d) Explain the two phase flow through packed tower in gas absorption. 4
 (e) Explain the term bound moisture, unbound moisture and equilibrium moisture content. 4
- 4.(a) Give different types of ion exchange resins and their applications. 5
 (b) Write the mixers used for mixing of ointments and explain about one. 5
 (c) What is caking of crystals and how it can be avoided? 4
OR
 (d) Write about different mixing impellers used in liquid mixing. 6
 (e) Discuss the principle, construction, and working of (a) planetary mixer (b) sigmoid mill. 8
- 5.(a) Define automatic process control system. Name the types of process variables? Explain about the equipment used for pressure control. 8
 (b) Explain the factors which influence the strength of granules. 6
OR
 (c) Explain about the energy involved in the granule compaction with a note on FD curves. 9
 (d) Explain the lubrication of die wall in compaction. 5

FACULTY OF PHARMACY

B. Pharmacy 2/4 II-Semester (Suppl.) Examination, November 2013

Subject : Pharmacognosy – I

Time: 3 Hours

Max.Marks: 70

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

- 1.(a) i) Give the systematic description of crude drugs. 7
 ii) Write a note on mutation and hybridization. 7
OR
- (b) i) Explain the exogenous factors causing variations in drug constituents. 7
 ii) What are plant hormones? Write their applications. 7
- 2.(a) i) Write a note on isoprenoid biosynthesis. 7
 ii) Write briefly about (A) precursor product sequence (B) sequential analysis. 7
OR
- (b) i) Explain the carbohydrate synthesis. 10
 ii) Write a note on Shikimic acid pathway. 4
- 3.(a) i) Discuss lycopodium spore method for the analysis of powdered crude drugs. 7
 ii) Explain different leaf constants. 7
OR
- (b) i) Write about physical and chemical evaluation of crude drugs. 8
 ii) Write a note on adulteration of crude drugs with suitable examples. 6
- 4.(a) i) Give biological source, chemical constituents and uses of
 (A) cellulose (B) Neemoil (C) Bees wax (D) Amla. (2½ x4=10)
 ii) Write a note on starch. 4
OR
- (b) i) Write the pharmacognostic study of castor oil. 10
 ii) Write a note on Tannins. 4
- 5.(a) i) Write a pharmacognostic study of cotton. 10
 ii) Write a note on Shark liver oil. 4
OR
- (b) i) Give the biological source, chemical constituents and uses of (A) Wool
 (B) Musk (C) Cochineal (D) Honey 10
 ii) Write a note on gelatin. 4

FACULTY OF PHARMACY

B. Pharmacy II Year II-Semester (Suppl.) Examination, November 2013

Subject : Environmental Studies

Time: 3 Hours

Max.Marks: 70

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

- 1.(a) Discuss about renewable energy resources. 7
 (b) Explain the problems associated with over exploitation of natural resources. 7
OR
- (c) Write notes on the following:
 i) Biotic components of the ecosystem 6
 ii) Sustainable life styles 4
 iii) Degradation of land. 4
- 2.(a) Explain the in-situ conservation of biodiversity. 8
 (b) Discuss about medicinal value of biodiversity. 6
OR
- (c) Explain the following:
 i) Hot spots 6
 ii) Genetic diversity 4
 iii) Endemic species of India 4
- 3.(a) Define pollution and discuss about various sources of water pollution. 8
 (b) Explain the effects of noise pollution. 6
OR
- (c) Write on the following:
 i) Hazardous waste management 6
 ii) Recycle and reuse of waste 4
 iii) Cost benefit analysis 4
- 4.(a) Explain the various methods of rain water harvesting. 8
 (b) Write about watershed management. 6
OR
- (c) Write notes on the following:
 i) Green revolution 5
 ii) Land slides 5
 iii) Nuclear accidents 4
- 5.(a) Explain the following:
 i) Negative and positive impacts of EIA 6
 ii) Forest conservation 4
 iii) Right to Information Act 4
OR
- (c) Write briefly on the following:
 i) Environmental Management Plan 5
 ii) Ecolabelling 4
 iii) Wild life Protection Act 5

FACULTY OF PHARMACY

B. Pharmacy 2/4 Year II-Semester (Suppl.) Examination, November 2013

Subject : Pharmaceutical Organic Chemistry – II

Time: 3 Hours

Max.Marks: 70

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

- 1.(a) i) Explain the mechanism of electrophilic substitution reactions. 7
 ii) Write the method of preparation and chemical reactions of naphthalene. 7
OR
- (b) i) Explain the acidity of phenols with examples. How do you convert phenol in to salicylaldehyde. 8
 ii) Explain the effect of substituent on reactivity and orientation of mono substituted benzenes. 6
- 2.(a) i) Write in detail about conformational isomerism with examples. 7
 ii) What is racemic modification? How do you resolve racemic modification. 7
OR
- (b) i) Discuss cis-trans isomerism with examples. 7
 ii) Define and explain elements of symmetry. 7
- 3.(a) i) Define heterocyclic compounds and explain systematic nomenclature to name heterocyclic compounds with four examples. 6
 ii) Explain why electrophilic substitution takes place at '3' position in pyridine. 4
 iii) Give two examples of medicinally important compounds representing each of the following heterocyclic systems (A) Furan (B) Pyrrole. 4
OR
- (b) i) Discuss the electrophilic aromatic substitution reactions of thiophene. 8
 ii) Outline the method of preparation and important reactions of (A) Quinoline (B) Isoquinoline. 6
- 4.(a) i) Outline the method of preparation and important chemical reactions of pyrazole. 8
 ii) Draw the structure and uses of compounds containing (A) Phenam (B) Cepham (C) Triazole. 6
OR
- (b) i) Draw the structure and method of preparations of (A) Thiazole (B) Diazine (C) Oxazole. 6
 ii) Write the ring structure, nomenclature and specific uses of compounds bearing (A) Cinnoline (B) Phenazine (C) Oxazine (D) Triazine 8
- 5.(a) i) Write any two applications of each of the following: 6
 (A) N-Bromosuccinamide
 (B) Selenium oxide
 (C) Perchloric acid
 ii) Write the mechanism with examples 8
 (A) Beckmann rearrangement (B) Hoffman rearrangement
OR
- (b) i) Write two applications of each of the following: 6
 (A) Lead Tetraacetate
 (B) Sodium periodate
 (C) LAH
 ii) Describe the mechanism of following reaction. 8
 (a) Fries migration (b) Amdt-Eistert synthesis.

FACULTY OF PHARMACY

B. Pharmacy 2/4 II – Semester (Main) Examination, March / April 2013

Subject: Pharmaceutical Biochemistry

Time: 3 Hours

Max.Marks: 70

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

- 1.(a) Explain the various transport mechanisms across cell membrane. (3)
 (b) Describe the concept of free energy. (3)
 (c) How do you determine the free energy from equilibrium constant? (8)
OR
 (d) Write the mechanism of active transport. (6)
 (e) Discuss about the production of ATP. (6)
 (f) What is the biological significance of ATP? (2)
- 2.(a) Define enzymes. Write the IUB classification of enzymes with examples. (6)
 (b) Write briefly on activators and deactivators of enzymes. (4)
 (c) Explain the clinical significance of enzymes, isoenzymes and co-enzymes. (4)
OR
 (d) Write EMP of glycolysis. (6)
 (e) Give the significance of pentose phosphate pathway. (4)
 (f) Explain uronic acid pathway. (4)
- 3.(a) Describe the β -oxidation of fatty acids. (6)
 (b) Write the biosynthesis of fatty acids. (6)
 (c) What are essential fatty acids? (2)
OR
 (d) Discuss the metabolism of cholesterol. (10)
 (e) Write a note on phospholipids and spingolipids. (4)
- 4.(a) What is biological oxidation? (3)
 (b) Explain the metabolism of amino acids. (6)
 (c) Write the biosynthesis of purines. (5)
OR
 (d) Discuss the different applications of r-DNA technology. (5)
 (e) Explain the mechanism of protein synthesis and its regulation. (5)
 (f) Write a note on inborn errors in metabolism. (4)
- 5.(a) Explain the principle and method for qualitative and quantitative determination of blood for
 i) SGPT and SGOT (6)
 ii) Glucose (4)
 iii) Urea (4)
OR
 (b) Describe the principle and method for quantitative analysis of urine for
 i) Ketone bodies (6)
 ii) Bile salts and bile pigments (4)
 iii) Glucose (4)

FACULTY OF PHARMACY

B. Pharmacy 2/4 II-Semester (Main) Examination, March / April 2013

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 a note on storage of crude drugs. (4)
- OR**
- (b)(i) Write the systematic description of crude drugs. (7)
(ii) Discuss the factors effecting the collection of crude drugs with suitable examples. (7)
- 2.(a)(i) Discuss about precursor product sequence. (6)
(ii) Write a note on carbohydrate synthesis. (8)
- OR**
- (b)(i) Describe (8)
(A) Sequential Analysis (B) Competitive Feeding
(ii) Write a note on Shikimic acid pathway. (6)
- 3.(a)(i) Write the determination of (8)
(A) Moisture content (B) Volatile oil content
(ii) Explain different types of adulteration with examples. (6)
- OR**
- (b)(i) Write a note on pest and pest control. (6)
(ii) Discuss briefly morphological and microscopic evaluation of crude drugs. (8)
- 4.(a)(i) Write Biological source, chemical constituents and uses of (10)
(A) Acacia (B) Starch (C) Agar (D) Amla
(ii) What are Tannins? Classify with suitable examples. (4)
- OR**
- (b)(i) Write pharmacognostic study of Isabgol or Linseed. (7)
(ii) Write a note on Agar and Myrobalan. (7)
- 5.(a)(i) Write a note on Shark liver oil. (7)
(ii) Write the differences between: (7)
(A) Cotton and Wool (B) Nylon and Silk
- OR**
- (b)(i) Write a note on any two mineral origin drugs. (7)
(ii) Write about any two drugs belonging to proteins and enzymes. (7)

FACULTY OF PHARMACY

B. Pharmacy II Year II – Semester (Main) Examination, March / April 2013

Subject: Pharmaceutical Engineering – II

Time: 3Hours

Max.Marks: 70

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

- 1.(a) Discuss the construction, working and application of fluid energy mill with diagram. (8)
- (b) What is standard sieve? How they are designed? (6)
- OR**
- (c) Discuss the factors affecting the efficiency of extraction. (5)
- (d) With the help of a neat diagram, explain the design and operation of podbielniak extractor with applications. (9)
- 2.(a) Discuss the principle, construction, working of automatic water stills. (5)
- (b) Explain the functioning of sieve plate and packed column in distillation with neat sketch. (5)
- (c) What is scaling and how it can be avoided? (4)
- OR**
- (d) Explain the theory, equipment and applications of molecular distillation. (9)
- (e) Explain the principle, construction and applications of climbing film evaporator? (5)
- 3.(a) Explain the mechanism of development of crystals and write Miers super saturation theory and its limitations. (7)
- (b) Explain the principle, process and special applications of freeze drying. (7)
- OR**
- (c) Describe an equipment for continuous type of crystallization on large scale. (6)
- (d) Explain the significance of drying curve. (4)
- (e) Explain the tower packing and tower construction in gas absorption. (4)
- 4.(a) What are the objectives of mixing? Explain them. (4)
- (b) Write the mixers used for mixing of viscous masses and explain about one. (6)
- (c) Write the applications of ion exchange resins. (4)
- OR**
- (d) What is the disadvantage of formation of vortex in liquid mixing? Suggest the methods to eliminate it. (6)
- (e) Describe the construction, working and applications of any two ointment mills. (8)
- 5.(a) Define automatic process control variables. Name the types of process variables. Explain about the equipment used for temperature control. (8)
- (b) Explain the factors which influence the strength of granules. (6)
- OR**
- (c) Explain about the energy involved in granule compaction with a note on FD curves. (8)
- (d) Explain adhesion and cohesion of particles. (6)

FACULTY OF PHARMACY

B. Pharmacy II-Year II-Semester (Main) Examination, March / April 2013

Subject : Environmental Studies

Time : 3 Hours

Max. Marks: 70

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

- 1.(a) Describe the abiotic and biotic components of ecosystem. (8)
 (b) Write about equitable use of resources. (6)
- OR**
- (c) Write notes on the following:
 (i) Over exploitation of resources (4)
 (ii) Solar energy (6)
 (iii) Degradation of forest (4)
- 2.(a) Explain the distribution of biodiversity. (8)
 (b) Write about species and genetic diversity. (6)
- OR**
- (c) Explain the following:
 (i) Biosphere reserves (5)
 (ii) Endangered species of India (4)
 (iii) National Park (5)
- 3.(a) Explain the following briefly.
 (i) Green house gases and global warming. (8)
 (ii) Waste management (6)
- OR**
- (b) Write briefly on the following
 (i) Environmental problems in India (6)
 (ii) Causes and control measures of Air pollution (8)
- 4.(a) Explain the problems and consequences of population explosion. (8)
 (b) Discuss about industrialization and green revolution. (6)
- OR**
- (c) Write notes on the following : (4x3.5)
 (i) Rain water harvesting
 (ii) Bioterrorism
 (iii) Floods
 (iv) Urbanization
- 5.(a) Explain the following:
 (i) Air Act (5)
 (ii) ISO 14000 (5)
 (iii) Wildlife Protection Act (4)
- OR**
- (b) Write briefly on the following:
 (i) Classification of EIA (5)
 (ii) Right to information Act (4)
 (iii) Forest conservation Act (5)

FACULTY OF PHARMACY

B. Pharmacy 2/4 II-Semester (Main) Examination, March / April 2013

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 mechanism of Nitration in benzene. (6)
 (ii) Explain the effect of substituent on reactivity and orientation of monosubstituted benzene. (8)
- OR**
- (b)(i) Explain acidity of phenols. (6)
 (ii) Write the structure and electrophilic substitution reactions of naphthalene. (8)
- 2.(a)(i) Write a note on enantiomers and diastereomers. (8)
 (ii) Define chirality, asymmetry, conformational isomerism and plane of symmetry. (6)
- OR**
- (b)(i) Write a note on sequence rules with examples. (8)
 (ii) Discuss cis-trans isomerism with examples. (6)
- 3.(a)(i) Write a note on skraup synthesis of quinoline. (6)
 (ii) Discuss the electrophilic aromatic substitution reactions of furan. (8)
- OR**
- (b)(i) Discuss the oxidation reactions of quinoline and iso quinoline. (6)
 (ii) Explain why electrophile attacks at 3rd position in pyridine. (4)
 (iii) Compare the aromaticity of pyrrole, furan and thiophene. (4)
- 4.(a)(i) Explain any two methods of preparation of oxazole and phenothiazine. (10)
 (ii) Write the ring structure and nomenclature of following heterocycle compounds (4)
 (A) Cinnoline (B) Phenazine (C) Triazole (D) Tetrazole
- OR**
- (b)(i) Discuss any two methods of preparation of pyrimidine. (8)
 (ii) Write the structure and system of numbering of the following heterocyclics with two examples of medically important compounds (6)
 (A) Benzopyran (B) Dioxane (C) Tetrazole
- 5.(a)(i) Write two applications of each of the following : (6)
 (A) Lithium aluminum hydride (B) Selenium oxide
 (ii) Describe the mechanism of following reactions : (8)
 (A) Fries migration (B) MPV reduction
- OR**
- (b)(i) Write two applications of each of the following : (6)
 (A) Lead tetra acetate (B) N-Bromo succinamide
 (ii) Explain the mechanism of following reactions: (8)
 (A) Oppenauer oxidation (B) Birch reduction