

PURUS - II (Semester Pattern): APRIL / MAY - 2011
SUBJECT: PHYSICAL PHARMACY - I

Day : Thursday
Date : 28-04-2011

Time: 10.00 A.M. To 1.00 P.M.
Max. Marks: 80

N. B.:

- 1) Q. No. 1 and Q. No. 5 are **COMPULSORY**. Out of remaining questions solve any two questions from each section.
- 2) Answers to both sections should be written in the **SEPARATE** answer books.
- 3) Figures to the right indicate **FULL** marks.

SECTION - I

Q. 1 Attempt **ANY FIVE** of the following: **(10)**

- i) Differentiate between ideal and real solutions.
- ii) Define and explain the term phase.
- iii) Give limitations of Vander Waal's equation.
- iv) Give applications of distribution law.
- v) Give the statements of kinetic molecular theory of gases.
- vi) What is liquefaction of gases? Give its any one application.
- vii) What is an expiry date for a formulation?

Q. 2 a) Explain in detail the different terms involved in phase rule. Describe in detail any one component system. **(10)**

b) Explain in detail the Rast camphor method used for determination of molecular weight. **(05)**

Q. 3 a) What is an upper consolute temperature? Explain in detail a two phase system exhibiting upper consolute temperature. **(08)**

b) Describe the relationship between elevation of boiling point and lowering of vapour pressure. Explain how molecular mass can be calculated from the knowledge of elevation of boiling point. **(07)**

Q. 4 Write short notes on **ANY THREE** of the following: **(15)**

- a) Arrhenius theory
- b) Debye-Huckel theory
- c) Colligative properties
- d) Three component system

P. T. O.

SECTION - II

- Q. 5** Attempt **ANY FIVE** of the following: (10)
- i) Define half life and shelf life.
 - ii) Describe any one type of complex reaction.
 - iii) Define the term solubility and cosolvency.
 - iv) State different mechanisms by which drugs are degraded.
 - v) Explain the term equivalent conductance.
 - vi) Explain the term electrolysis.
 - vii) What is a Q_{10} value?
- Q.6** a) What is first order reaction? Derive an equation for the same. Derive an equation for half life determination of a first order reaction. (10)
- b) What is catalysis? Explain acid-base catalysis. (05)
- Q. 7** a) Explain the influence of solvents on the solubility of drugs. (08)
- b) Describe the Nernst distribution law and its limitations. (07)
- Q. 8** Write short notes on **ANY THREE** of the following: (15)
- a) Accelerated stability studies
 - b) Classical collision theory
 - c) Raoult's law and its deviations
 - d) Partition coefficient and its significance

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PURUS - III (SEMESTER PATTERN): APRIL/MAY- 2011
SUBJECT: PHARMACEUTICAL BIOCHEMISTRY - II

Day: Saturday
Date: 23-04-2011

Time: 2:00 P.M. To 5:00 P.M.
Max. Marks: 80

N.B.:

- 1) Question No. 1 and 5 are **COMPULSORY**.
- 2) Solve **ANY TWO** from remaining questions from each section.
- 3) Answer to both the sections should be written in **SEPARATE** answer book.

SECTION - I

- Q.1** Answer the following: (10)
- a) What is oxidative deamination?
 - b) What is propionate pathway?
 - c) What is role of Folic acid in all C-1 transferases?
 - d) What is site directed mutation?
 - e) What is gluconeogenesis?
- Q.2** a) What is glycolysis? Explain in detail and give energetics of glycolysis. (08)
b) What is jaundice? Explain different types of jaundice. (07)
- Q.3** a) What are high quality proteins? Explain protein calorie Malnutrition. (06)
b) What is acid-base balance? How P^H of various body fluids is regulated? (06)
c) What is renal acidosis? (03)
- Q.4** Write short notes on following: (15)
- a) Replication
 - b) Genetic code
 - c) Feed back inhibition
 - d) Catabolism of tryptophan
 - e) Glycogen synthesis

SECTION - II

- Q.5** Answer the following: (10)
- a) What is primer?
 - b) What is osteoporosis?
 - c) What is wobble hypothesis of genetic code?
 - d) What is substrate level phosphorylation?
 - e) What are essential amino acids?
- Q.6** Answer the following:
- a) What is pentose phosphate pathway? Explain in detail and give its significance. (08)
 - b) What is β oxidation? Give energetics of palmitate. (04)
 - c) What is respiratory acidosis? (03)
- Q.7** a) What are immunochemical methods of diagnosis? Explain in detail. (10)
b) Explain importance of primer selection in diagnostic P C R. (05)
- Q.8** Write short notes on: (15)
- a) Ketosis
 - b) Urea biosynthesis
 - c) Vitamin C And drug metabolism

PURUS -III (SEMESTER PATTERN): APRIL / MAY 2011
SUBJECT: PHARMACEUTICAL MICROBIOLOGY - I

Day : Monday
Date : 02.05.2011

Time: 2.00 P.M. TO 5.00 P.M.
Max. Marks: 80.

N.B.:

- 1) Q.No.1 and 5 are **COMPULSORY**. Out of remaining questions, attempt **ANY TWO** questions from each section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answer to the two sections should be written in **SEPARATE** answer books.

SECTION-I

Q.1 Attempt **ANY FIVE** questions of the following: [10]

- a) Define useful magnification and LR of compound microscope.
- b) Give contribution of Louis Pasteur in microbiology.
- c) Give difference between sterilization and disinfection.
- d) Describe applications of fluorescence microscopy.
- e) Enlist factors affecting selection of disinfectants.
- f) Differentiate between Rickettsia and viruses.
- g) Give economic significance of actinomycetes.

Q.2 Answer the following: [15]

- a) Give chemical classification of antimicrobials.
- b) Draw a ray diagram of compound microscope. Enumerate function of each part.
- c) Describe R.W. test for evaluation of disinfectants.

Q.3 a) Write in detail radiation sterilization. [08]
b) Discuss sterility testing as per IP. [07]

Q.4 Write short notes on **ANY THREE** of the following: [15]

- a) Koch postulates
- b) SEM
- c) Aseptic area
- d) Ethylene oxide sterilization

SECTION-II

Q.5 Attempt **ANY FIVE** questions of the following: [10]

- a) Give applications of yeasts.
- b) What is pure culture? How will you isolate pure culture?
- c) Discuss about morphology of viruses.
- d) Differentiate between yeasts and moulds.
- e) Write about sexual reproduction in bacteria.
- f) Discuss wet-mount method in mycology.
- g) Define Enriched and Enrichment media.

Q.6 Answer the following: [15]

- a) Explain role of colony characteristics in identification of bacteria.
- b) Describe life cycle of bacteriophages.
- c) Explain about cultivation of viruses.

Q.7 a) Give detailed classification of viruses. [08]
b) Discuss methods for measurement of bacterial growth. [07]

Q.8 Write short notes on **ANY THREE** of the following: [15]

- a) Tumor viruses

PURUS- IV (SEMESTER PATTERN): APRIL/ MAY- 2011
SUBJECT: PHARMACEUTICAL ANALYSIS- I

Day: Monday
Date: 25-04-2011

Time: 2:00 P.M. To 5:00 P.M.
Max. Marks: 80

N.B:

- 1) **Q. 1 and Q. 5 are COMPULSORY.** Solve **ANY TWO** questions from each section.
- 2) Answer to both the section should be written in **SEPARATE** answer book.
- 3) Figures to the right indicate **FULL** marks.

SECTION-I

- Q.1** Attempt **ANY FIVE** of the following: **(10)**
- a) Explain accuracy and precision with suitable example.
 - b) Define pKa. Derive its equation.
 - c) Define and express the equation for molarity and normality.
 - d) Give two examples of Redox indicators.
 - e) Calculate equivalent weight and molecular weight of Sodium bicarbonate.
 - f) Give two chemical reactions of neutralization titration.
- Q.2** a) Write a note on Sampling techniques. **(08)**
b) Explain theories of indicator in acid base titrations. **(07)**
- Q.3** a) Define buffer and buffer index? Explain the mechanism of buffer action with suitable example. **(05)**
b) Explain in detail neutralization curves. **(05)**
c) Explain various methods of oxidation reduction titration. **(05)**
- Q.4** Write notes on (**ANY THREE**): **(15)**
- a) Hydrolysis of salts
 - b) Indicator range
 - c) Assay of ferrous sulphate
 - d) Iodometric titrations

SECTION-II

- Q.5** Attempt **ANY FIVE** of the following: **(10)**
- a) Why is disodium edetate used instead of EDTA?
 - b) What are ideal conditions for carrying out process of precipitation?
 - c) What is onium ion? Give the reaction for onium ion formation?
 - d) Give advantages of Gravimetric analysis.
 - e) How will you prepare 0.1 N Perchloric acid?
 - f) What is the difference between Unidentate and polydentate ligand?
- Q.6** a) Explain in detail levelling effect and differentiating effect for strong acids and bases and weak acids and bases. **(07)**
b) Discuss the analysis of a mixture of copper, cadmium and calcium metals by using masking and demasking agents. **(08)**
- Q.7** Explain in detail post precipitation and digestion. **(15)**
Draw figures and explain working of adsorption indicators in precipitation titrations.
- Q.8** Write notes on (**ANY THREE**): **(15)**
- a) Volhard's Method
 - b) nM indicators

PURUS - IV (SEMESTER PATTERN): APRIL / MAY - 2011
SUBJECT: PHARMACEUTICAL CHEMISTRY - V (ORGANIC)

Day : Friday
Date : 22-04-2011

Time: 2.00 P.M. To 5.00 P.M.
Max. Marks: 80.

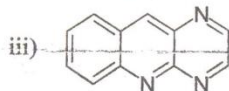
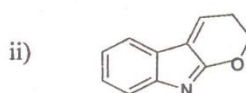
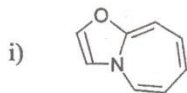
N.B.:

- 1) Q.No.1 and Q.No.5 are **COMPULSORY**. Out of remaining questions attempt **ANY TWO** questions from each section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the section should be written in **SEPARATE** answer book.

SECTION-I

Q.1 Answer ANY FIVE of the following: [10]

- a) Define the following terms:
 - i) Synthone
 - ii) Disconnection
- b) Why mannose is a reducing sugar?
- c) Fructose reacts with acetic anhydride to give two isomeric pentacetate derivatives neither of which reduce Fehling's or Tollen's reagent. Explain.
- d) Pyridine undergoes electrophilic substitution with difficulty. Explain.
- e) Write IUPAC names of any two of the following compounds



- f) Draw structures for the any two of the following compounds:
 - i) 2H-1,2-benzoxazine
 - ii) 4H-[1,3]thiazino[3,4-a]azepine
 - iii) Furo[3,2-d]pyrimidine
 - iv) Piperazine
- g) What will happen if pyrrole is treated with Formaldehyde and diamethylamine? Give equations.

Q.2 Give two methods of synthesis, two reactions and medicinally useful [15] compounds of ANY THREE of the following heterocyclic compounds.

- a) Quinoline b) Isoquinoline c) Pyrimidine d) Furan.

Q.3 a) Predict the products of ANY THREE of the following reactions: [06]

