

PURUS-II (2015 COURSE) (CBCS) SUMMER - 2016
SUBJECT: PHARMACEUTICAL BIOCHEMISTRY-I

Day : Monday
Date : 02-05-2016

Time : 10:00AM-1:00
Max.Marks.60

N.B.

- 1) **Q.1** and **Q.5** is **COMPULSORY**. Out of remaining questions attempt any **TWO** questions from each section.
- 2) Answer to both the section should be written in the **SEAPRATE** answer books.
- 3) Figures to the right indicate **FULL** marks.

SECTION-I

- Q.1** Attempt **ANY FIVE** of the following. (10)
- a) What is isoelectric precipitation?
 - b) What are co-enzymes?
 - c) What are excitable membranes?
 - d) What are anti- metabolites? Give one examples.
 - e) How C-terminal of peptide is determined?
 - f) What is selective partial hydrolysis of polypeptide?
- Q.2** a) Explain how the affinity chromatography and gel filtration techniques separate proteins. (07)
b) What is feed back inhibition? (03)
- Q.3** a) Why plasma membrane is selectively permeable? What is active transport? (07)
b) What is primary structure of protein? (03)
- Q.4** Write short notes on **ANY TWO** of the following. (10)
- a) Fluid mosaic model of membrane.
 - b) Allosteric enzymes as regulators.
 - c) Isoenzymes

SECTION-II

- Q.5** Attempt **ANY FIVE** of the following. (10)
- a) What are phospholipids? Give one example.
 - b) Give structure and names of amino acid containing indole and guanidine group.
 - c) What are derived amino acids?
 - d) State any one bioanalytical application of enzymes.
 - e) What are simple lipids?
 - f) Define acid value of oil.
- Q.6** a) Describe effect of substrate concentration on the rate of enzyme catalyzed reaction. (07)
b) What is primary transport system. (03)
- Q.7** a) What is enzyme immobilization? Give its importance. (07)
b) State principle of ion exchange chromatography. (03)
- Q.8** Write short notes on **ANY TWO** of the following. (10)
- a) Classification of enzyme according to IUB
 - b) Fractional salt precipitation
 - c) Tertiary level of protein structure.
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PURUS – II: (2011 COURSE): SUMMER – 2016
SUBJECT: HUMAN ANATOMY & PHYSIOLOGY – II

Day: **Thursday**
Date: **12-05-2016**

Time: **10:00 AM TO 1:00 P.M.**
Max. Marks: 80

N.B.:

- 1) **Q. No. 1 and Q. No. 5 are COMPULSORY.** Out of the remaining attempt any **TWO** questions from each section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer book.
- 4) Draw neat labeled diagrams **WHEREVER** necessary.

SECTION-I

- Q.1** Answer any **FIVE** of the following: **(10)**
- a) Enlist the hormones of pituitary gland.
 - b) Write a brief note on myxedema.
 - c) Write a brief note on Cushing's syndrome.
 - d) What is pyelonephritis? Enlist the causes of pyelonephritis.
 - e) Define renal calculi.
 - f) Draw a neat labeled diagram of pancreas.
- Q.2** a) Explain in detail the anatomy of kidneys. Add a note on structure of nephron. **(08)**
- b) Explain in detail the physiological role of parathyroid hormones. **(07)**
- Q.3** a) Explain in detail the physiology of skeletal muscle contraction. **(08)**
- b) Explain in detail the physiology of hearing. **(07)**
- Q.4** Write short notes on any **THREE** of the following: **(15)**
- a) Oxytocin
 - b) Factors affecting Glomerular filtration
 - c) Anatomy of eye
 - d) Hormones of Adrenal gland

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SECTION-II

- Q.5** Answer any **FIVE** of the following: **(10)**
- a) Write a brief note on pineal gland.
 - b) Differentiate sympathetic and parasympathetic neurons.
 - c) Define neurotransmitter. Give example.
 - d) Enlist the functions of hypothalamus.
 - e) Define heat stroke.
 - f) What are motor neurons? Explain their functions.
- Q.6** a) Name the types of reflexes. Explain in detail the un-conditioned reflexes. **(08)**
- b) Explain in detail the anatomy of cerebrum. **(07)**
- Q.7** a) Explain the anatomy of male reproductive system. **(08)**
- b) Explain in detail the anatomy of Skin. **(07)**
- Q.8** Write short notes on any **THREE** of the following: **(15)**
- a) Utilization of energy during exercise
 - b) Medulla oblongata
 - c) Parasympathetic nervous system
 - d) Menstrual cycle

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PURUS – II (2011 COURSE): SUMMER – 2016
SUBJECT : COMMUNITY PHARMACY & HOSPITAL PHARMACY

Day : **Friday**
Date : **06-05-2016**

Time : **10:00AM TO 1:00 P.M.**
Max. Marks : 80

N.B.:

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

SECTION – I

- Q.1** Attempt **ANY FIVE** of the following: [10]
- a) Draw the ideal layout for community pharmacy.
 - b) Define and enlist the importance of essential drug concept.
 - c) Write etiology, sign and patient counseling in case of worm infestation.
 - d) Enlist the responsibilities of community pharmacist.
 - e) Define and write the importance of pharmaceutical care plan.
 - f) Write the contents and importance of patient information leaflets.
- Q.2** a) Define and enlist the importance of health screening services. [08]
b) Define Rational drug therapy. Explain in detail factors considered to avoid irrational drug combinations with example. [07]
- Q.3** a) Write in detail about the legal requirements and various registers used in community pharmacy. [08]
b) Write in detail about patient counseling aids. [07]
- Q.4** Write a note on **ANY THREE** of the following: [15]
- a) Factors considered for the selection of site for community pharmacy
 - b) Role of pharmacist in improving the medication adherence
 - c) Code of ethics
 - d) Non pharmacological therapy to GI disturbances

SECTION – II

- Q.5** Attempt **ANY FIVE** of the following: [10]
- a) Define the term radiopharmaceuticals and lead time.
 - b) What is Antibiotic policy?
 - c) Define and enlist the functions of hospital pharmacy.
 - d) What are the advantages of HFS?
 - e) Differentiate between the charged and non-charged drugs with examples.
 - f) Define and classify the techniques of sterilization.
- Q.6** a) Define PTC. Explain in detail the functions of PTC. [08]
b) Write in detail about the EOQ method of inventory control. [07]
- Q.7** a) Explain the role of pharmacist in case of handling of Radiopharmaceuticals. [08]
b) Write in detail about role and organizational setup of hospital pharmacy. [07]
- Q.8** Write short notes on **ANY THREE** of the following: [15]
- a) Location, layout and management of CSSR
 - b) Composition of hospital formulary system
 - c) Drug distribution system for outdoor patients
 - d) Intravenous admixture programme

PURUS-II (2011 COURSE); SUMMER-2016
SUBJECT: PHARMACEUTICAL ENGINEERING II

Day: Wednesday
Date: 04-05-2016

Time: 10:00 AM TO 1:00 PM
Max. Marks: 80

N.B:

- 1) **Q. No.1 and Q. No.5 are COMPULSORY.**
- 2) Solve **ANY TWO** questions from each section from the remaining.
- 3) Draw neat diagram **WHEREVER** necessary.

SECTION-I

- Q.1** Solve **ANY FIVE:** (15)
- a) What is fractional distillation?
 - b) What is principle of flash dryer?
 - c) What is convection heat transfer?
 - d) What is conduction heat transfer?
 - e) Give wavelength of light used for IR drying.
 - f) Why constant rate drying period in crystalline solids is longer?
- Q.2** a) Classify evaporators. Explain construction and working of long tube evaporator. (10)
b) Explain concept of freeze drying. (05)
- Q.3** a) Explain azeotropic distillation in details. (08)
b) Explain distillation under reduced pressure. (07)
- Q.4** Write short notes on (**ANY THREE**): (15)
- a) Forced circulation evaporator
 - b) Heat exchangers
 - c) Scale formation
 - d) Drum Dryer

SECTION-II

- Q.5** Solve **ANY FIVE:** (10)
- a) Write down capsule filling mechanism.
 - b) Give classification of crystallisers.
 - c) How to select packaging material for water sensitive drugs.
 - d) Enlist factors affecting crystallisation.
 - e) What is role of crystal shape in pharmacy?
 - f) How flow properties of powder form can be improved?
- Q.6** a) Explain in detail extrusion and spheronisation process. (10)
b) Explain criteria used for selection of packaging material in pharmacy. (05)
- Q.7** a) With a neat labelled diagram explain fluidised bed granulation. (08)
b) Explain working and principle of circulating magma crystalliser. (07)
- Q.8** Write short notes on (**ANY THREE**): (15)
- a) Caking of crystals
 - b) Co-crystallisation
 - c) Mier's theory of crystallisation

PURUS -II (2011 COURSE) : SUMMER - 2016
SUBJECT: PHARMACEUTICAL CHEMISTRY-IV (ORGANIC)

Day: Friday
Date: 29-07-2016

Time: 10:00AM TO 1:00PM.
Max. Marks: 80

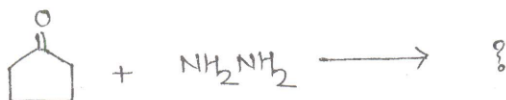
N.B.:

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

SECTION-I

Q.1 Answer any **FIVE** of the following: (10)

- a) What is Trioxane?
- b) What is Tollen's test?
- c) Predict the product.



- d) How acetals are obtained from aldehyde?
- e) Why addition of HI to alkenes does not give Markovnikov product?
- f) What happens when bromine is added to alkenes?
- g) What is Clemensen's reduction of aldehydes?

Q.2 Describe reactions of aldehydes and ketones with following. (Any three). (15)

- (i) NH_3 (ii) CH_3MgI (iii) Hydroxylamine
(iv) HCN (v) NH_2OH

Q.3 a) Give methods of preparation of aldehydes and ketones in detail. (10)

b) What is Michael condensation? (05)

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

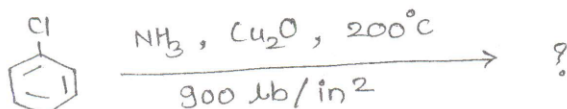
- a) Hydroxylation
- b) Cannizaro reaction
- c) Markovnikov Addition
- d) Ozonolysis

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SECTION-II

Q.5 Answer any **FIVE** of the following: **(10)**

a) Predict the product.



- b) What is Gabriel synthesis?
- c) What is Diazotization reaction?
- d) What happens when ammonia is treated with acid chloride?
- e) What is Mustard oil reaction?
- f) How aniline is obtained from nitrobenzene industrially?
- g) Aliphatic amines are more basic than aromatic amines. Explain

Q.6 a) Give methods of preparation and reactions of phenols **(15)**

Q.7 a) Define and classify Elimination reaction. Give its mechanism in detail. **(10)**

b) Give methods of preparation of carboxylic acids **(05)**

Q.8 Write short notes on any **THREE** of the following: **(15)**

- a) Hofmann Rearrangement
- b) Esterification reaction
- c) Saytzeff orientation
- d) Reductive Amination

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PURUS-II (2015 COURSE) (CBCS): SUMMER-2016
SUBJECT: PHARMACEUTICAL ENGINEERING-II

Day: Wednesday
Date: 04-05-2016

Time: 10:00AM TO 1:00P.M.
Max. Marks: 60

N.B:

- 1) **Q. No.1 and Q. No.5 are COMPULSORY.**
- 2) Solve **ANY TWO** questions from each section from the remaining.
- 3) Draw neat diagram **WHEREVER** necessary.

SECTION-I

- Q.1** Solve **ANY FIVE:** (10)
- a) What are azeotropes?
 - b) What is initial adjustment period in drying?
 - c) Give two applications of freeze drying?
 - d) What is HETP?
 - e) What are advantages of Infrared drying?
 - f) What is significance of moisture content in granules?
- Q.2** a) Explain principle and working of fractional distillation. (06)
b) Give different modes of heat transfer. (04)
- Q.3** a) Explain construction and working of multiple effect evaporator. (06)
b) Explain principle and working of falling film evaporator. (04)
- Q.4** Write short notes on (**ANY TWO**): (10)
- a) Steam traps
 - b) Theory of drying
 - c) Spray drying

SECTION-II

- Q.5** Solve **ANY FIVE:** (10)
- a) What is significance of crystallization in pharmacy?
 - b) What is advantage of DTB crystallizer?
 - c) What are products based on pelletization in market?
 - d) What are applications of humidity measurement in pharmacy?
 - e) What are uses of paper as packing materials in pharmacy?
 - f) What is roller compactor?
- Q.6** a) Explain principle of antisolvent crystallization. (06)
b) Explain air conditioners in detail used in pharmacy field. (04)
- Q.7** a) Explain equipments and process for extrusion spherulization. (06)
b) Discuss construction and working of Swenson Walker crystallizer. (04)
- Q.8** Write short notes on (**ANY TWO**): (10)
- a) Co-crystallization
 - b) Caking of crystals
 - c) Capsule filling

PURUS – II (2015 COURSE) (CBCS): SUMMER – 2016
SUBJECT : PHARMACEUTICAL CHEMISTRY – III (INORGANIC)

Day : Saturday
Date : 23-04-2016

Time : 10:00 AM TO 1:00 PM.
Max. Marks : 60

N.B.:

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

SECTION – I

- Q.1** Attempt **ANY FIVE** of the following: [10]
- a) Give the role of Phosphate buffer system.
 - b) Write the principle in the assay of boric acid.
 - c) Define temporary and permanent hardness of water.
 - d) Define protectives with suitable examples.
 - e) Write the principle in the assay of hydrogen peroxide
 - f) Write the principle in the assay of potassium permagnate
- Q.2** a) Explain various methods for softening temporary hard water. [07]
b) Write the principle in the assay of zinc oxide. [03]
- Q.3** a) What are buffers? Write a note on buffers used in pharmaceuticals. [07]
b) Write uses of povidone iodine [03]
- Q.4** Write short notes on **ANY TWO** of the following: [10]
- a) Antioxidants
 - b) Official control test for water.
 - c) Tincture iodine

SECTION – II

- Q.5** Attempt **ANY FIVE** of the following: [10]
- a) Give the role of oxygen in body.
 - b) Why stannous fluoride solution should be freshly prepared?
 - c) Define antidotes. Give their classification.
 - d) What are desensitizing agents? Give examples.
 - e) Define expectorants and emetics.
 - f) What is laughing gas? Give its uses.
 - g) Why elements in the radio-contrast media should have high atomic number?
- Q.6** a) Describe ammonium compounds as respiratory stimulants. [07]
b) Give the properties and uses of nitrogen gas. [03]
- Q.7** a) Discuss the composition of dentifrices with elaboration of polishing agents. [07]
b) Explain how dental caries are formed. [03]
- Q.8** Write short notes on **ANY TWO** of the following: [10]
- a) Assay and uses of carbon dioxide
 - b) Helium gas
 - c) Cyanide poisoning

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