

WINTER - 2014  
PURUS- II (2011 COURSE):  
SUBJECT: HUMAN ANATOMY AND PHYSIOLOGY -II

Day: Saturday  
Date: 22-11-2014

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**.
- 2) Answer any **TWO** questions out of the remaining in each section.
- 3) Draw neat labeled diagram wherever necessary.

**SECTION-I**

- Q.1** Answer Any **FIVE** of the following (10)
- a. Enlist the functions of oxytocin.
  - b. Define Goitre.
  - c. Define Menier's disease.
  - d. Define exotropia.
  - e. Define tetany.
  - f. Define enuresis.
  - g. Define diuresis.
- Q.2** a. Explain in detail anatomy of urinary system with a neat labeled diagram. (08)  
b. Explain the homeostasis of calcium and phosphates by PTH and calcitonin. (07)
- Q.3** a. Explain the neuromuscular junction with its role in skeletal muscle contraction. (08)  
b. Explain in detail the anatomy of ear (07)
- Q.4** Write short notes on Any **THREE** of the following: (15)
- i. Functions of thyroid.
  - ii. Anti-diuretic hormone.
  - iii. Physiology of micturation.
  - iv. Regulation of acid balance.

**SECTION-II**

- Q.5** Answer Any **FIVE** of the following (10)
- a. Name the cranial nerves passing through pons.
  - b. What is falx cerebri?
  - c. Name the meninges of brain and their function.
  - d. Name the accessory sex organs.
  - e. What is cranial nerve IV? Mention its type and functions.
  - f. Name the sources of ATP for skeletal muscles.
  - g. Define heat exhaustion.
- Q.6** a. What is conditioned reflex? Explain the components of conditioned reflex in detail. (08)  
b. Explain the components of sympathetic nervous system in detail. (07)
- Q.7** a. Explain the physiology of female reproductive system. (08)  
b. Draw a neat labeled diagram of skin and explain about epidermis. (07)
- Q.8** Write short notes on Any **THREE** of the following: (15)
- i. Hypothalamus
  - ii. Spermatogenesis
  - iii. Functions of thalamus
  - iv. Metabolism in exercise

**PURUS-II (2011 COURSE): WINTER - 2014**  
**SUBJECT: COMMUNITY PHARMACY AND HOSPITAL PHARMACY**

Day : Thursday  
Date : 20-11-2014

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**.
- 2) Out of the remaining solve **Any TWO** questions from each section.
- 3) Both sections should be written in the **SEPARATE** answer books.
- 4) Figures to the **RIGHT** indicate full marks.

**SECTION-I**

- Q.1** Solve **Any FIVE** : (10)
- a) Explain the importance of computers in community pharmacy.
  - b) What is the importance of rational drug use?
  - c) Define and explain the importance of pictograms.
  - d) Explain the coding system for medications in community pharmacy.
  - e) Enlist the responsibilities of community pharmacists.
  - f) State the importance of pharmaceutical care plan.
- Q.2** a) Factors considered for the selection of site for pharmacy. (07)  
b) Role of pharmacist in patient medication adherence. (08)
- Q.3** a) Role of pharmacist in diabetes and hypertension testing. (08)  
b) Explain the importance of patient counselling. (07)
- Q.4** Write notes on : (**Any THREE**) (15)
- a) Concept of rational drug therapy.
  - b) Legal requirements for starting community pharmacy.
  - c) Role of pharmacist in the essential and non-essential drugs.
  - d) Code of ethics

**SECTION-II**

- Q.5** Answer the following : (**Any FIVE**) (10)
- a) Define and classify hospitals.
  - b) Define the terms :  
i) Inventory control                      ii) Safety stock
  - c) Enlist the importance of radio-isotope committee.
  - d) State the sterilization technique in hospitals.
  - e) Explain the functions of hospitals
  - f) State the importance of satellite pharmacy in hospital.
- Q.6** a) Define and explain briefly various methods of inventory control. (07)  
b) Explain various health accessories used in hospitals. (08)
- Q.7** a) Explain the organizational pattern of hospital. (08)  
b) Explain the hospital formulary system in detail. (07)
- Q.8** Write notes on : (**Any THREE**) (15)
- a) Intravenous admixture programme.
  - b) Central sterile supply rooms.
  - c) Functions of radiopharmaceuticals.
  - d) Distribution of charged and non charged drugs

**PURUS -II (2011 COURSE): WINTER - 2014**  
**SUBJECT: PHARMACEUTICAL ENGINEERING- II**

Day: Tuesday  
Date: 18-11-2014

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 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** Solve Any **FIVE** of the following: (10)
- a) Explain forced convection.
  - b) What is a scale formation?
  - c) Define Fourier's law.
  - d) Define capacity and economy of evaporators.
  - e) What is plate efficiency?
  - f) Differentiate between distillation and evaporation.
  - g) What is molecular distillation?
- Q.2** a) What is heat exchange? Discuss various types of heat exchangers. (08)  
b) Discuss centrifugal rotary evaporators. (07)
- Q.3** a) Derive an expression for heat transfer between fluid and solid boundary. (08)  
b) Discuss centrifugal rotary evaporators. (07)
- Q.4** Write short notes on ( Any **THREE**): (15)
- a) Steam traps
  - b) Fractionating column
  - c) Theory of evaporation
  - d) Glass as packaging material

**SECTION-II**

- Q.5** Solve any **FIVE** of the following: (10)
- a) State significance of drying
  - b) Enlist different particle size enlargement techniques.
  - c) Differentiate between spray drying and spray congealing
  - d) Define crystal habit.
  - e) Write the functions of packaging material.
  - f) Draw a neat diagram of spray dryer.
  - g) State the principle of freeze drying
- Q.6** a) Discuss theory of drying. Explain principle working and construction of fluidized bed dryer. (15)
- Q.7** a) Discuss any three particle size enlargement techniques. (08)  
b) Explain the process of pouch packing. (07)
- Q.8** Write short notes on Any **THREE** of the following: (15)
- a) Swenson-Walker crystallizer

PURUS – II (2011 COURSE): WINTER - 2014

SUBJECT: PHARMACEUTICAL BIOCHEMISTRY - I

Day: Saturday  
Date: 15-11-2014

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**. 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** Answer **ANY FIVE** of the following: (10)
- a) What are derived amino acids?
  - b) What is passive transport?
  - c) What is Zwitterion?
  - d) Define Acid value of oil?
  - e) Give interactions involved in tertiary structure of protein.
  - f) Draw well labelled diagram of cell.
- Q.2** a) Define Enzymes? Describe various factors affecting rate of enzyme catalysis. (08)  
b) What are proteins? Add a note on functional classification of proteins. (07)
- Q.3** a) What is protein precipitation? Give different methods of protein isolation. (08)  
b) Add a detailed note on polysaccharides. (07)
- Q.4** Write short note **ANY THREE** of the following: (15)
- a) Antimetabolites
  - b) Glycolipids
  - c) Marker enzymes
  - d) Enzyme Inhibition

**SECTION - II**

- Q.5** Answer **ANY FIVE** of the following: (10)
- a) Why is ATP called the energy "Currency" of the cell?
  - b) Why sucrose is called the "invert sugar"?
  - c) What is difference between polypeptides and proteins?
  - d) What are phospholipids?
  - e) What is reaction of amino acids with Ninhydrin?
  - f) Draw structure of Glycine, Glutamate and Glutamine.
- Q.6** a) Add a detailed note of Excitable membrane. (08)  
b) What are essential amino acids? Give their importance. (07)
- Q.7** a) Explain structural levels of proteins. (08)  
b) What are carbohydrates? Discuss in oligosaccharides? (07)
- Q.8** Write short notes on **ANY THREE** of the following: (15)
- a) Derived Lipids
  - b) Action of  $\alpha$  Amylase
  - c) Isoenzymes
  - d) Mitochondria

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**PURUS-II (2011 COURSE): WINTER - 2014**  
**SUBJECT: PHARMACEUTICAL CHEMISTRY- III (INORGANIC)**

Day: Tuesday  
Date: 11-11-2014

Time: 10:00 A.M. To 1:00 P.M.  
Max. Marks: 80

**N.B.:**

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

**SECTION - I**

- Q.1** Answer **ANY FIVE** of the following: **(10)**
- a) Define Acid and base as per Bronsted Lowry concept with examples.
  - b) What is bacteriostatic water for injection?
  - c) Write Henderson-Hasselbalch equation.
  - d) Write differences in various types of official water.
  - e) Write mode of action of Hydrogen Peroxide as Antimicrobial agent.
  - f) Write mechanism of action of Antioxidant.
- Q.2** a) Define Protective and Adsorbents. Give their ideal properties. Add a note on talc and titanium dioxide **(08)**
- b) Justify the use of water as pharmaceutical vehicle. **(07)**
- Q.3** a) Discuss in detail the classification of Pharmaceutical aid with suitable examples. **(08)**
- b) Describe various buffer systems with examples. Write a note on selection of buffer. **(07)**
- Q.4** Write short notes on any **THREE** of the following: **(15)**
- a) Astringents
  - b) Potassium permanganate
  - c) Properties of water
  - d) Hydrogen peroxide

(C.P.T.O)

**SECTION - II**

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

- a) Name any two compounds used as desensitizing agent in dental preparations.
- b) Define emetics and antidotes.
- c) How is oxygen supplied and stored? Give the types of oxygen deficiency in human body.
- d) What is the role of positive contrast media and negative contrast media?
- e) Give the important role of Oxygen and Nitrogen.
- f) How cyanide poisoning can be treated?

**Q.6** a) Discuss in detail Principal, reactions and assay of Sodium nitrite and Copper sulphate. (08)

b) Explain in detail Heavy metal poisoning. (07)

**Q.7** a) Describe in detail properties, preparation and uses of Carbon dioxide and Helium. (08)

b) Give the mechanism of action of sedative and stimulant expectorants. (07)

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

- a) Dental products
- b) Emetics
- c) Respiratory stimulants
- d) Sodium thiosulphate

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PURUS - II : WINTER - 2014 (2011 course)  
SUBJECT: PHARMACEUTICAL CHEMISTRY - IV (Organic)

Day : Thursday  
Date : 13-11-2014

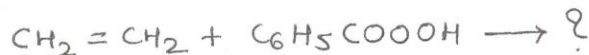
Time : 10.00 A.M. To 1.00 P.M.  
Max Marks: 80

N.B.

- 1) Q. No. 1 and Q. No. 5 are **COMPULSORY**
- 2) Out of the remaining questions solve any two questions from section - I  
And any two questions from section - II
- 3) Answers to the sections should be written in the separate answer books.

SECTION - I

- Q.1 Attempt **ANY FIVE** of the following (10)
- a) What will happen when halogen is added to alkene? Illustrate.
  - b) What products are obtained when 2-butene undergoes oxidative degradation?
  - c) Why benzophenone does not undergo aldol condensation reaction?
  - d) Predict the product.



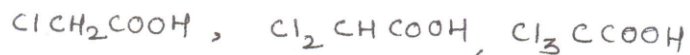
- e) What is Stephens reduction of nitrile?
  - f) What is Diborane?
  - g) What will happen when calcium salt of carboxylic acid is heated?
- Q.2 What is markovnikov and Anti-markovnikov additions to alkenes. Explain (15)  
with mechanism.
- Q.3 a) Give reactions of aldehydes and ketones. (10)
- b) What will happen when formaldehyde is treated with 50% NaOH (05)
- Q.4 Write Short note on **ANY THREE** of the following (15)
- a) Ozonolysis
  - b) Hydration of aldehydes
  - c) Hydroxylation
  - d) Oxymercuration and Demercuration

P.T.O.

SECTION - II

Q.5 Attempt ANY FIVE of the following (10)

- What is Bakelite?
- How phenolphthalein is prepared from phenol?
- Arrange the following compounds in order of increasing acidity.



- What is Kolbe reaction?
- What is Gabriel synthesis?
- What is  $\alpha$  - elimination reaction?
- Boiling point of acetic acid is more than propanol. Why?

Q.6 Define elimination reaction. Give its classification, mechanism and structural orientation in detail. (15)

Q.7 a) Give reactions of carboxylic acids. (08)

b) What will happen when aromatic amine is treated with nitrous acid? (07)

Q.8 Write Short notes on ANY THREE of the following (15)

- Elimination Vs Substitution
- Preparation of phenols
- Malonic ester synthesis
- Hofmann Rearrangement

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