PURUS-II (2011 COURSE): APRIL/ MAY- 2014
SUBJECT: PHARMACEUTICAL ENGINEERING-II

Day: Saturday
Date: 03-05-2014

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 the remaining attempt any **TWO** questions from each section.
2) Both the sections should be written in **SEPARATE** answer books.
3) Figures to the **RIGHT** indicate full marks.

SECTION-I

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

a) Discuss the method used for separation of volatile oil.
b) Explain Kirchloff's law of heat transfer.
c) What is H.E.T.P? Explain in brief.
d) Enlist different drying equipments.
e) What is scaling? How it should be removed in heat transfer.
f) Classify steam traps.

Q.2 a) Explain in detail Fourier's law and steady state heat transfer. **(07)**
b) Discuss various mechanisms of heat transfer in detail. **(08)**

Q.3 a) Explain in detail theory of drying. Add a note on factors affecting drying. **(07)**
b) Define evaporation. Discuss in detail climbing and falling film tube evaporators. **(08)**

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

a) Molecular distillation
b) Heat transfer between fluid and solid boundary
c) Fluidized bed dryer
d) Heat exchangers

SECTION-II

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

a) Enlist different crystal habit.
b) Give significance of particle size enlargement.
c) Draw a neat diagram of Rotary tablet compression machine.
d) Enumerate criteria for packaging material selection.
e) What is supersaturation?
f) Classify crystallizers.

Q.6 a) Give an account on principle and working of Swenson Walker crystallizer. **(07)**
b) Discuss the methods of particle size enlargement. **(08)**

Q.7 a) Explain principle and working of single punch tablet compression machine. **(07)**
b) Discuss various materials used in construction of packaging equipments with their advantages, disadvantages. **(08)**

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

a) Theories of superaturation
b) Circulating magma crystallizer
c) Roller compactor
d) Blister and Pouch Packaging

PURUS-II (2011 COURSE): APRIL/MAY- 2014
SUBJECT: COMMUNITY PHARMACY AND HOSPITAL PHARMACY

Day : Tuesday
Date : 06-05-2014

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 questions, attempt **ANY TWO** from each section.
2) Answers to both the sections should be written in **SEPARATE** answer books.
3) Figures to the right indicate **FULL** marks.
4) Draw neat, labeled diagrams **wherever** necessary.

SECTION-I

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

a) Draw a standard layout of Community Pharmacy.

b) Enlist the various functions of community pharmacist.

c) Write importance of Essential drug concept.

d) Common drug therapy and patient counselling in constipation.

e) Enlist the importance of Health screening services.

f) Give the various examples of prescription and Non prescription drugs.

Q.2 a) Explain in detail various factors considered while selecting the site for Community Pharmacy. **(08)**

b) Define 'Medication Adherence'. Explain the role of pharmacist for improving the medication adherence. **(07)**

Q.3 a) Define the term 'Patient Counseling'. Explain the various stages of patient counselling. **(08)**

b) Define and classify the various Health Screening services. Explain the symptoms, preventive medicine and patient counselling in case of Blood pressure. **(07)**

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

a) Legal requirement and stocking of medicines in pharmacy

b) Pharmaceutical care plan

c) Various patient counselling Aids

d) Use of computers in pharmacy management.

P.T.O.

SECTION-II

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

a) Various functions of Hospital Pharmacist.

b) Define and enlist the importance of Inventory control.

c) Differentiate between charged and non-charged drugs.

d) Define the term Lead time and safety stock.

e) Draw an ideal layout of CSSR.

f) Define and classify the various types of Hospitals

Q.6 **a)** Explain in detail the organization of Hospital. **(08)**

b) Write in detail the various methods of inventory control. **(07)**

Q.7 **a)** Write in detail about the location, Layout, sterilization techniques and management of CSSR. **(08)**

b) Define and classify various Radiopharmaceuticals. Explain role of pharmacist in Handling of Radiopharmaceuticals. **(07)**

Q.8 Write short notes on : **(ANY THREE)** **(15)**

a) Intravenous admixture programme

b) Distribution system for indoor patients

c) Pharmacy and therapeutic committee

d) Composition of Hospital formulary and its importance

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PURUS-II : APRIL/ MAY · 2014 (sem Pattern)

SUBJECT : PHARMACEUTICAL CHEMISTRY-III (ORGANIC)

Day : Friday

Date : 25-04-2014

Time : 10·00 A·M·TO 1·00 P.M.

Max. Marks : 80.

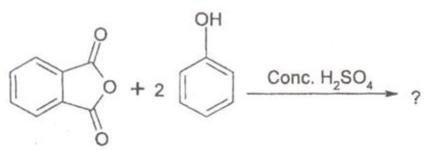
N.B.:

1) **Q. No. 1** and **Q. No. 5** are **COMPULSORY.** Out of the remaining attempt any **TWO** questions from Section-I and any **TWO** questions from Section-II.
2) Answers to the two sections should be written in **SEPARATE** answer books.
3) Figures to the **RIGHT** indicate full marks.

SECTION-I

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

a) Sodium bicorbonate is used in the identification of carboxylic acids. Why?
b) What is Gatterman reaction?
c) Give resonance of phenol.
d) Predict the product.



e) Why electrophilic addition takes place at multiple bonds only?
f) What is Oxo process?
g) How dichlorocarbene is obtained from chloroform?
h) Explain – Amines are basic in nature.

Q.2 a) Explain electrophilic addition of HBr to alkenes along with Markovnikov and AntiMarkovnikov rule. **(10)**

b) What is acetoaceticester synthesis of aldehydes. **(05)**

Q.3 Explain addition of water, alcohol, thiols, cyanide and derivatives of ammonia to aldehydes. **(15)**

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

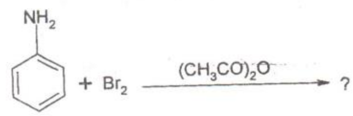
a) Knoevengel condensation
b) Aldol condensation
c) Hydroxylation
d) Methods of preparation of phenol.

P.T.O.

SECTION-II

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

a) Give two methods for the synthesis of secondary amines.
b) How acetals and hemiacetals are obtained from aldehydes?
c) What is reductive amination?
d) Predict the product.



e) What is Reformatski reaction?
f) What happens when ammonia is treated with excess of methanol in presence of Al_2O_3?
g) How aniline is obtained from chlorobenzene?
h) What is Gabriel phthalimide synthesis?

Q.6 a) Give method of preparation and reactions of carboxylic acids. **(10)**

b) What is Hofmann rearrangement? **(05)**

Q.7 a) Differentiate between elimination and substitution by giving examples. **(08)**

b) What happens when alkenes are treated with ozone gas? Explain with mechanism. **(07)**

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

a) Hydroboration
b) Cannizzaro reaction
c) Diekmann condensation
d) Reduction of aldehydes and ketones.

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SUBJECT : PHARMACEUTICAL BIOCHEMISTRY - I

Day : Wednesday | Time : 10.00 A.M. To 1.00 P.M.
Date : 30-04-2014 | 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) Answers to both the sections should be written in **SEPARATE** answer books.
3) Figures to the right indicate **FULL** marks.

SECTION - I

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

a) What are derived amino acid?
b) What is formal titration?
c) What is heparin?
d) State specificity of enzyme Trypsine.
e) What are antimetabolites?
f) What are liposomes?

Q.2 a) What are co-enzymes? Explain with suitable example. **[05]**
b) What is enzyme immobilization? Explain in detail. **[05]**
c) What is primary structure of protein? How it is determined? **[05]**

Q.3 Answer **ANY THREE** of the following: **[15]**

a) What are the functions of membrane? Explain any two specialized functions of membrane.
b) What is 6-APA? Give process of manufacturing of 6-APA.
c) Explain secondary structure of peptide.
d) What is double reciprocal plot? Explain it in detail.

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

a) Feed back inhibition
b) Tertiary structure of protein
c) Active transport
d) Complex carbohydrate

SECTION - II

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

a) Give medicinal use of streptokinase.
b) State co-enzymes obtained form Vitamin B_1 and B_6.
c) What is nutritional value of protein?
d) What is enzyme inhibition?
e) What are Allosteric modulators?
f) What is facilitated diffusion?

Q.6 Answer **ANY THREE** of the following: **[15]**

a) Explain in detail mechanism of transmission of nerve impulse.
b) State the effect of following reagent on protein structure.

i) β Mercapto ethanol **iii)** Heavy metal ions **v)** Glutaraldehyde
ii) Formaldehyde **iv)** Organo phosphorous

c) How will you transform enzymes to an industrial catalyst?
d) Draw diagrams of fluid mosaic model of membrane and state the properties of it.

Q.7 a) Define specificity of enzymes and illustrate conformations of active sites. **[08]**
b) State and explain applications of enzymes. **[07]**

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

a) Ion exchange chromatography
b) Electrophoresis
c) Effect of pH on enzyme catalysis

PURUS-II (2011 COURSE): APRIL/ MAY 2014
SUBJECT : PHARMACEUTICAL CHEMISTRY-IV (ORGANIC)

Day : Monday
Date : 28-04-2014

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 the remaining attempt any **TWO** questions from Section-I and any **TWO** questions from Section-II.
2) Answer the both the sections should be written in **SEPARATE** answer books.
3) Figures to the **RIGHT** indicate full marks.

SECTION-I

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

a) Why nucleophilic addition reaction is charecteristic reaction for aldehydes and ketones?
b) What is Perkin reaction?
c) Predict the product.

$$CH_2 = CH_2 + H_2O + Hg\left(CH_3COO\right)_2 \rightarrow ?$$

d) What is Hydroboration?
e) How iso-octane is obtained?
f) What is Diglyme? How it is prepared?
g) What is Reformatski reaction?
h) How alkanes are obtained from alkenes?

Q.2 What is electrophillic addition to alkenes? Give its mechanism. How alkenes are oxidised in presence of peracid and ozone gas? **(15)**

Q.3 a) Explain nucleophillic addition of Water, Hydrogen Cyanide to aldehydes and ketones. **(08)**

b) Why addition of HBr sometimes gives antimarkovnikov product? **(07)**

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

a) Catalytic Hydrogenation
b) Cannizzaro reaction
c) Knoevengel condensation
d) Hydroxylation

P.T.O.

SECTION-II

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

a) Differentiate between E1 and E1cb mechanism.

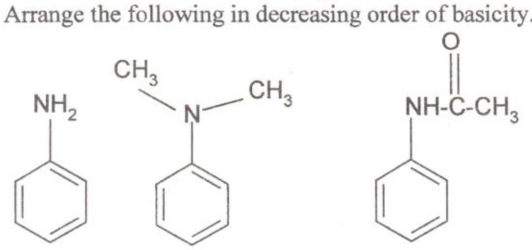
b) Explain- Boling points of carboxylic acids are higher than those of alcohols of same molecular weight.

c) Give common names for following carboxylic acids

(i) $CH_3(CH_2)_4COOH$ (ii) $CH_3(CH_2)_{10}COOH$

d) Predict the product.

e) Arrange the following in decreasing order of basicity.



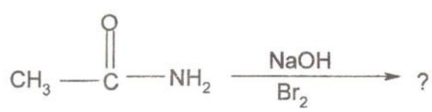
f) How dilute acetic acid is prepared industrially?

g) What is Koch reaction?

h) Define Hofmann orientation in elimination reaction.

Q.6 a) Give methods of preparation and reactions of phenols. **(10)**

b) Complete the following reaction and give its mechanism. **(05)**



Q.7 a) Differentiate between Elimination and Substitution. **(08)**

Give methods for separation of mixture of amines. **(07)**

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

a) Saytzeff rule

b) Esterification reaction

c) Malonic ester synthesis

d) Reactions of amines with nitrous acid.

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PURUS - II (2011 COURSE): APRIL / MAY - 2014
SUBJECT : HUMAN ANATOMY & PHYSIOLOGY - II

Day : Thursday
Date : 08-05-2014

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 questions, attempt **ANY TWO** questions from each section.
2) Answers to both the sections should be written in the **SEPARATE** answer books.
3) Figures to the right indicate **FULL** marks.

SECTION - I

Q.1 Attempt **ANY FIVE** questions of the following: **[10]**
- **a)** Name the hormones of adrenal gland.
- **b)** Define Pheochromocytoma.
- **c)** Enlist the functions of kidney.
- **d)** Define tetany.
- **e)** Define cretinism.
- **f)** Define polycystic kidney disease.
- **g)** Define achromatopsia.

Q.2
- **a)** Explain in detail physiology of urine formation. **[08]**
- **b)** Explain in detail the anatomy of ear. Draw a labeled diagram. **[07]**

Q.3
- **a)** Explain the physiology of skeletal muscle contraction. **[08]**
- **b)** Explain the role of various gonadal hormones. **[07]**

Q.4 Write short notes on **ANY THREE** of the following: **[15]**
- **a)** Parathyroid hormone
- **b)** Regulation of acid balance
- **c)** Glucocorticoids
- **d)** Retina

SECTION - II

Q.5 Attempt **ANY FIVE** questions of the following: **[10]**
- **a)** Functions of pons.
- **b)** What is falx cerebelli?
- **c)** Name the cranial nerves passing through midbrain.
- **d)** Classify nervous system.
- **e)** Phases of menstrual cycle.
- **f)** Benefits of exercise.
- **g)** Heat exhaustion.

Q.6
- **a)** Describe components of reflex pathway. **[08]**
- **b)** Explain the physiology of male reproductive system. **[07]**

Q.7
- **a)** Draw a neat labeled diagram of skin and explain about epidermis. **[08]**
- **b)** Describe the role of cardiovascular system in exercise. **[07]**

Q.8 Write short notes on **ANY THREE** of the following: **[15]**
- **a)** Spinal cord
- **b)** Oogenesis
- **c)** Neurotransmitters
- **d)** Respiration in exercise

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