

PURUS - V (2011 COURSE): April-May - 2014
SUBJECT : MEDICINAL CHEMISTRY - I

Day : Tuesday
Date : 22-04-2014

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

N.B.

- 1) Q.1 and Q.5 are **COMPULSORY**.
- 2) Out of the remaining solve any **TWO questions** from **Section - I** and any **TWO questions** from **Section - II**.
- 3) Figures to the right indicate **FULL** marks.
- 4) Answers to both the sections should be written in **SEPARATE** answer books.

SECTION - I

- Q.1** Outline synthesis of **ANY FIVE** drugs from the following. **(10)**
- | | |
|----------------------|-------------------|
| i) Salbutamol | ii) Prazocin |
| iii) Ethacrynic acid | iv) Acetazolamide |
| v) Amino phylline | vi) Isoproterenol |
| vii) Terbutaline | |
- Q.2** a) Classify antihypertensives giving one representative structure for each class. **(05)**
b) Explain the mode of action of ACE inhibitors. **(05)**
c) Discuss chemistry of cardiac glycosides. **(05)**
- Q.3** a) Classify sulfonamides with examples and explain mode of action of carbonic anhydrase inhibitors. **(08)**
b) Discuss chemistry and SAR of thiazides in details. **(07)**
- Q.4** Write short notes on any **THREE**: **(15)**
- a) Direct sympathomimetics
 - b) α -antagonists
 - c) Anti-arrhythmics
 - d) Mercurial diuretics
 - e) Potassium sparing diuretics

SECTION - II

- Q.5** Solve any **FIVE**: **(10)**
- a) Define agonist and antagonist.
 - b) Draw the structure of first neurotransmitter.
 - c) Explain importance of pKa with respect to drug action.
 - d) Draw structures of any two cholinomimetic agents.
 - e) Explain the term bioisosterism with examples.
 - f) Differentiate between different subtypes of muscarinic receptors.
 - g) List out important uses of NM blockers.
- Q.6** a) Classify cholinergic agents with structure. **(05)**
b) Comment on cholinergic agonist. **(05)**
c) Write down synthesis of dicyclomine and decamethonium bromide. **(05)**
- Q.7** a) Comment on ganglionic stimulants. **(05)**
b) Describe MOA of ganglionic blockers. **(05)**
c) Write down synthesis of gaunithidine and chlorozoxazone. **(05)**
- Q.8** Write short notes on any **THREE**: **(15)**
- a) NM Blockers
 - b) Anti-muscarinics
 - c) Stereochemical aspects of drug action
 - d) Reversible anticholinesterases
 - e) Synthesis of carbachol and gallamine

PURUS - V (2011 COURSE): April-May-2014
SUBJECT: PHARMACEUTICAL ANALYSIS - III

Day: Sunday
Date: 27-04-2014

Time: 10.00 A.M. To 1.00 P.M.
Max. Marks: 40

N.B.:

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

SECTION - I

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

- a) Define 'Longitudinal diffusion'.
- b) Enlist variables that lead to band broadening.
- c) Define 'Selectivity factor'.
- d) What parameters can influence retention factor of a solute?
- e) Explain the term 'Corrected retention volume'.
- f) Enlist characteristics of an ideal G.C. detector.

Q.2 a) Write a note on 'Plate Theory and Rate Theory'. (08)
b) Explain the term 'Resolution'. How is it influenced by retention time and selectivity factor? (07)

Q.3 Write a note on columns and stationary phases used in G.C. (15)

Q.4 Write short notes on **ANY THREE** of the following: (15)
a) Sensitivity of G.C. detectors
b) Column efficiency
c) Applications of G.C.
d) Classification of chromatographic methods

SECTION - II

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

- a) Migration parameters in Paper Chromatography
- b) How isolation is carried out of separated components in paper chromatography.
- c) Physical properties of Ion exchange resins.
- d) Write stages of separation in gel chromatography.
- e) Classification of electrophoretic methods.
- f) Role of ion exchangers in demineralization of water.

Q.6 a) Explain mechanism of gel permeation chromatographic separation. (07)
b) Explain non classical electrophoretic types. Discuss about moving boundary electrophoresis. (08)

Q.7 a) Explain types of development techniques used in paper chromatography. (07)
b) Describe various operational techniques used in paper chromatography. (08)

Q.8 Write short note on **ANY THREE** of the following. (15)
a) Advantages of gel chromatography
b) Methods of operation of column in ion exchange chromatography
c) Zone capillary electrophoresis

PURUS - V (2011 COURSE): April-May-2014
SUBJECT: PHARMACOGNOSY - I

Day: Wednesday
Date: 07-05-2014

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) 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) Name any four drugs obtained from animal sources.
 - b) Define pharmacognosy. Write scope of pharmacognosy.
 - c) What are plant growth regulators?
 - d) Give examples of drugs obtained from marine sources.
 - e) What is morphological evaluation of crude drug?
 - f) Name naturally occurring auxins.
 - g) Give applications of plant growth hormones.
- Q.2** a) Write biological evaluation of crude drugs with suitable examples. (07)
b) Write in detail about collection of crude drug. (08)
- Q.3** a) Write in detail physical evaluation of crude drugs. (07)
b) Write note on pharmacological and chemical classification of crude drug. (08)
- Q.4** Write short notes on: (Any **THREE**) (15)
- a) Auxins
 - b) History of pharmacognosy
 - c) Cytokinins
 - d) Morphological classification of crude drugs

SECTION-II

- Q.5** Solve Any **FIVE** of the following: (10)
- a) Draw neat well labelled diagram of Isapgol T.S.
 - b) Write different criteria for tracer compound selection.
 - c) Define carbohydrate. Give examples.
 - d) Write Biological Source of Acacia and Agar.
 - e) Write principle of Homoeopathic system of medicine.
 - f) Give different chemical tests for carbohydrates.
 - g) Write any four drugs used in aromatherapy.
- Q.6** a) What are lipids? Give classification of lipid along with different chemical test for lipid? (07)
b) Write method of extraction of shark liver oil and its uses. (08)
- Q.7** a) Write role of tracer techniques in elucidation of biosynthetic pathway. (07)
b) Write in detail about Ayurvedic system of medicine. (08)
- Q.8** Write pharmacognostic account of following drug : (Any **THREE**) (15)
- a) Honey
 - b) Pectin
 - c) Castor oil

PURUS - V: (2011 COURSE) (~~April-May-2014~~)
SUBJECT: COSMETICOLOGY - I

Day: Friday
Date: 02-05-2014

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** from each section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answer to both the sections should be written in **SEPARATE** answer book.

SECTION-I

- Q.1** Answer Any **FIVE** of the following: (10)
- a) Mention the properties of dimethylpolysiloxane in different cosmetic products
 - b) Enlist different perfumes used in cosmetics.
 - c) Explain Humectants used in cosmetics with suitable examples.
 - d) Explain skin sensitization test.
 - e) What is the role of titanium dioxide in cosmetics?
 - f) Explain role of Ascorbic acid (vitamin C) and Tocopherol (vitamin E) in cosmetics.
- Q.2** a) Discuss performance and psychometric evaluation of cosmetics with suitable example. (10)
b) Comment on scope of cosmetic industry. (05)
- Q.3** a) Discuss safety of cosmetics. (08)
b) Discuss preservation of cosmetics. (07)
- Q.4** Write short notes on any **THREE** of the following: (15)
- a) Surfactants used in cosmetics
 - b) Vitamins used in cosmetics
 - c) Silicones used in cosmetics
 - d) Colorants used in cosmetics

SECTION-II

- Q.5** Answer any **FIVE** of the following: (10)
- a) What is the role of beeswax in beeswax-borax cream?
 - b) Explain sun tanning agents.
 - c) Mention the anti-microbial agents used in deodorant soap.
 - d) Enlist skin bleaching agents.
 - e) Explain approaches to counteract dryness of skin.
 - f) Define the term emollient and protective.
- Q.6** a) What are astringent materials? Discuss formulations and manufacturing of skin Toners and skin tonics. (10)
b) Comment on skin cleaners. (05)
- Q.7** a) Discuss formulation and manufacturing of anti-acne products. (08)
b) Discuss mechanism of Sun-tanning and Sun-burning. (07)
- Q.8** Write short notes on any **THREE** of the following: (15)
- a) Suntan preparations
 - b) Deodorants
 - c) Preservatives in creams and lotions

PURUS - V (2011 COURSE): April-May-2014
SUBJECT : PHARMACOLOGY - II

Day : Monday
Date : 05-05-2014

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** Answer **ANY FIVE** of the following: [10]
- a) Name the drugs used in unstable angina.
 - b) Enlist the adverse effects of statins.
 - c) Enlist the clinical uses of antifibrinolytics.
 - d) Mention parenteral iron preparations.
 - e) Mention the sources of nitric oxide.
 - f) Enlist the uses of Potassium channel openers.
 - g) Give examples of angiotensin antagonists.
- Q.2** a) Classify antianginal drugs. Explain in detail the pharmacology, adverse effects and uses of nitrates. [08]
b) Explain in detail on central sympatholytics. [07]
- Q.3** a) Classify anticoagulants. Explain in detail the mechanism of action, drug interactions, uses and contraindications of warfarin. [08]
b) Classify hypolipoproteinemic drugs. Explain the mechanism of action, uses and adverse effects of fibrates. [07]
- Q.4** Write short notes on **ANY THREE** of the following: [15]
- a) Folic acid
 - b) Fibrinolytics
 - c) Explain the physiological and pathological role of nitric oxide
 - d) Digitalis toxicity

SECTION - II

- Q.5** Answer **ANY FIVE** of the following: [10]
- a) Explain the mechanism of action of stool softeners.
 - b) Give the composition of WHO-ORS formulation.
 - c) What are Proton pump inhibitors?
 - d) Explain the mechanism of action of osmotic purgatives.
 - e) Define diuretics and antidiuretics.
 - f) Explain the mechanism of action of salbutamol.
 - g) Enlist prokinetic drugs used as antiemetic.
- Q.6** a) Classify diuretics. Explain in detail loop diuretics. [08]
b) Explain the pharmacotherapy of peptic ulcer. [07]
- Q.7** a) Classify antitussive drugs with suitable examples. Explain the pharmacotherapy of cough. [08]
b) Explain drug therapy of diarrhea. [07]
- Q.8** Write short notes on **ANY THREE** of the following: [15]
- a) Bronchodilators
 - b) Stimulant purgatives

PURUS - V (2011 COURSE): April-May-2014
SUBJECT : DOSAGE FORM DESIGN - II

Day : Tuesday
Date : 29-04-2014

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 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** Answer **ANY FIVE** of the following: [10]
- a) Write merits and demerits of topical gels.
 - b) Write suitable semisolid base to incorporate oil soluble drug for topical application.
 - c) Write method to study drug diffusion from transdermal gel formulation.
 - d) Enlist with example drugs that can not be filled in capsules.
 - e) Enlist defects of hard capsule shell and explain any one.
 - f) Write disintegration times for soft and hard capsules and justify these standards.
- Q.2** a) Discuss formulation to be filled in hard capsules. What is the principle of calculation overages of formula? [10]
b) Discuss large scale manufacturing equipments for creams. [05]
- Q.3** a) Discuss quality control for ointments. [08]
b) Write principle and application of pastes. [07]
- Q.4** Write short notes on **ANY THREE** of the following: [15]
- a) Water soluble ointment base
 - b) Raw material for hard capsule shells
 - c) Rotary die process
 - d) Sorting and counting of capsules

SECTION - II

- Q.5** Answer **ANY FIVE** of the following: [10]
- a) Compare tableting properties of fine powder and granules.
 - b) Write principles and application of mouth dissolving tablets.
 - c) Write mechanism of disintegrating agents with two examples of super disintegrant.
 - d) Write preservatives used in tablet formulation.
 - e) Write principle of FBP coating.
 - f) Write principle of propellant action and give two examples of ozone-safe propellants.
- Q.6** a) Write quality control of coated tablets. [10]
b) Write note on directly compressible additives. [05]
- Q.7** a) Discuss problems in tableting and remedies thereof. [08]
b) Discuss fundamental and principle of therapeutic aerosol. [07]
- Q.8** Write short notes on **ANY THREE** of the following: [15]
- a) Importance of Aerodynamic of aerosol particles
 - b) Dry powder inhaler
 - c) Colours used in tablets
 - d) Evaluation of granules