

PURUS - VI: WINTER - 2014 , (2011 Course).
SUBJECT: PHARMACOGNOSY -II

Day: Monday
Date: 24-11-2014

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) Answer to both the sections should be written in **SEPARATE** answer books.
- 3) Draw neat labeled diagrams **WHEREVER** necessary.
- 4) Figures to the right indicate **FULL** marks.

SECTION-I

- Q.1** Attempt any **FIVE** of the following: (10)
- a) Give advantages of continuous hot extraction.
 - b) Enlist different types of extracts.
 - c) What is importance of standardization of extracts?
 - d) Write biological source of garlic.
 - e) Give any two uses of cucumber.
 - f) What is Rf value?
- Q.2** a) Give various techniques of Chromatography. Elaborate on HPTLC and its role of in herbal drug analysis. (08)
- b) What are nutraceuticals? Detail about various components of nutraceuticals with their significance. (07)
- Q.3** a) Write about the current status of nutraceuticals in commerce. Discuss about Arnica as a nutraceutical component. (08)
- b) Justify role of column chromatography in herbal analysis with the help of examples. Also compare it with HPLC. (07)
- Q.4** Write short notes on any **THREE** of the following: (15)
- a) Fenugreek
 - b) Supercritical extraction
 - c) General extraction method for glycosides
 - d) Chromatography and herbal drug analysis

SECTION-II

- Q.5** Attempt any **FIVE** of the following: (10)
- a) Give any one formula for herbal hair care cosmetics.
 - b) Give significance of determination of pesticide residue in herbal drug.
 - c) What is callus?
 - d) Explain any one growth parameter in suspension culture.
 - e) Give significance of aloe in herbal cosmetics.
 - f) Explain in short production of herbal face pack.
- Q.6** a) What is totipotency? Explain the composition and nutritional requirements of culture medium for plant tissue culture. (08)
- b) Write about the skin care cosmetics. Mention role of various herbs in the same with formulae. (07)
- Q.7** a) Discuss about the strategies to enhance the production of secondary metabolite or phytopharmaceuticals. (08)
- b) Give an account of herbs used in hair care cosmetics. Write about quality control parameters for hair care herbal cosmetics. (07)
- Q.8** Write short notes on any **THREE** of the following: (15)

PURUS - VI (2011 COURSE): WINTER - 2014
SUBJECT: PHARMACEUTICAL BIOTECHNOLOGY
(INCLUDING MOLECULAR BIOLOGY)

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

SECTION - I

- Q.1** Answer **ANY FIVE** of the following: (10)
- a) What are restriction-endonucleases?
 - b) Give life cycle of a Bacteriophage.
 - c) What is a plasmid?
 - d) Give differences between DNA and RNA.
 - e) Draw a neat diagram of tRNA.
 - f) What is Primase?
 - g) What are introns and exons?
- Q.2** Discuss the scope of Biotechnology in various fields of Pharmaceutical Sciences. (15)
- Q.3** Describe the central dogma of molecular biology and discuss how DNA controls cellular metabolism. (15)
- Q.4** Write short notes on **ANY THREE** of the following: (15)
- a) Transcription
 - b) Codon
 - c) Sickle cell hemoglobin
 - d) Replication of lagging strand
 - e) Griffith's experiment

SECTION - II

- Q.5** Answer **ANY FIVE** of the following: (10)
- a) What is culture media?
 - b) Give a few applications of enzymes in food industry.
 - c) Define mutation.
 - e) Draw a neat diagram of stir-tank reactor.
 - f) What are extremophiles?
 - g) What are inversion mutations?
- Q.6** Describe various processes of enzyme immobilization and discuss its applications. (15)
- Q.7** Describe different types and designs of bioreactors. (15)
- Q.8** Write short notes on **ANY THREE** of the following: (15)
- a) Mutagenesis in strain improvement
 - b) Applications of yeast fermentation

PURUS-VI - (2011 COURSE) WINTER - 2014
SUBJECT: PHARMACEUTICAL ANALYSIS - IV

Date: Thursday
Day: 13-11-2014

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

- N.B.** 1) Q. No. 1 & Q. No. 5 are **COMPULSORY**. Out of the remaining attempt any two questions from section - I & section -II.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the section should be written on **SEPARATE** answer book.

SECTION - I

- Q.1** Attempt any **FIVE** of the following (10)
a) What is the principle of thin layer chromatography?
b) What do you understand by HPLC?
c) What are the factors that influence the R_f value in thin layer chromatography?
d) What do you mean by HPLC adsorption chromatography? Give its applications.
e) How solvents are selected in TLC?
f) Describe the comparison between HPLC and TLC.
- Q.2** a) Describe the various techniques employed for the development of chromatoplates in TLC. (07)
b) Explain in detail column efficiency and selectivity. (08)
- Q.3** a) Describe in detail the separation of amino acids and sugars by TLC. (07)
b) Draw a neat diagram of HPLC. Explain in detail refractive index detector and UV-Visible detector. (08)
- Q.4** Write short Notes on **ANY THREE** (15)
a) Reciprocating pumps
b) Analytical columns in HPLC
c) Compare between TLC and paper chromatography
d) Detecting agent in TLC

SECTION - II

- Q.5** Attempt any **FIVE** of the following (10)
a) Give the importance of chamber saturation in HPTLC.
b) Give the advantages of band over spot applications in HPTLC.
c) Enlist the adulterants used in turmeric powder.
d) How will you determine the water content in milk sample?
e) What are critical temperature and critical pressure for SCF?
f) What is tailing and fronting in HPTLC?
- Q.6** a) Explain in detail the selection of adsorbent and mobile phase used in HPTLC. (07)
b) Discuss the various parts of SCF chromatography. (08)
- Q.7** a) Discuss the factors influencing the HPTLC separation and resolution of spots. (07)
b) Discuss the prevention of Food Adulteration Act and the responsibilities of Food Inspector. (08)
- Q.8** Write short Notes on **ANY THREE** (15)
a) Densitometric determination in HPTLC
b) Effect of pressure and temperature in SCF chromatography
c) Detection and visualization of band in HPTLC
d) Adulterants in vegetables
- * * * * *

PURUS - VI (2011 COURSE) : WINTER - 2014
SUBJECT : MEDICINAL CHEMISTRY - II

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

SECTION - I

- Q. 1 Draw structures of any **FIVE** and mention their category: (10)
- a) Haloethane
 - b) Thiopental sodium
 - c) Pentobarbital sodium
 - d) Phensuximide
 - e) Serotonine
 - f) Oxazepam
 - g) Methaqualone hydrochloride
- Q. 2 a) Explain important features of phase - I and phase - II metabolic pathways. (05)
- b) Discuss oxidation of aromatic, aliphatic and alicyclic carbons. (05)
- c) Elaborate upon GSH conjugation. (05)
- Q. 3 a) What are various stages of general anesthesia? (05)
- b) Discuss chemistry of general anesthetics. (05)
- c) Classify different types of epilepsies with their symptoms. (05)
- Q. 4 Write short notes on any **THREE** of the following: (15)
- a) Benzodiazepines
 - b) Barbiturates
 - c) Chemistry of anticonvulsants
 - d) Anorectics
 - e) Hallucinating agents

P. T. O.

SECTION -II

- Q. 5** Attempt any **FIVE** questions of the following: (10)
- a) Comment on characteristics of prodrugs.
 - b) Draw structure of chlorpromazine and desipramine.
 - c) Outline the synthesis of lignocaine.
 - d) Give the classification of anti-depressant drug with suitable examples.
 - e) Write about Mode of Action of local anesthetics on Sodium channel.
 - f) Draw any four ring systems found in tricyclic anti-depressants.
 - g) Write a bout MOA of anxiolytic drugs.
- Q. 6** a) Discuss the SAR, MOA of Phenothiazine derivatives. (10)
- b) Outline the synthesis of (05)
- i) Imipramine
 - ii) Dibucaine
- Q. 7** a) Write in detail of SAR and MOA of MAO inhibitors. (10)
- b) Discuss 5 approaches to site - specific delivery by prodrugs. (05)
- Q. 8** Write short notes on any **THREE** of the following: (15)
- a) Routes of administration of local anesthetics
 - b) MOA of neuroleptic drugs
 - c) SAR of tricyclic antidepressants
 - d) schizophrenia

* * * * *

PURUS-VI - (2011 COURSE) WINTER - 2014
SUBJECT: PHARMACEUTICAL ANALYSIS - IV

Date: Thursday
Day: 13-11-2014

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

- N.B. 1) Q. No. 1 & Q. No. 5 are **COMPULSORY**. Out of the remaining attempt any two questions from section - I & section -II.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the section should be written on **SEPARATE** answer book.

SECTION - I

- Q.1 Attempt any **FIVE** of the following (10)
a) What is the principle of thin layer chromatography?
b) What do you understand by HPLC?
c) What are the factors that influence the R_f value in thin layer chromatography?
d) What do you mean by HPLC adsorption chromatography? Give its applications.
e) How solvents are selected in TLC?
f) Describe the comparison between HPLC and TLC.
- Q.2 a) Describe the various techniques employed for the development of chromatoplates in TLC. (07)
b) Explain in detail column efficiency and selectivity. (08)
- Q.3 a) Describe in detail the separation of amino acids and sugars by TLC. (07)
b) Draw a neat diagram of HPLC. Explain in detail refractive index detector and UV-Visible detector. (08)
- Q.4 Write short Notes on **ANY THREE** (15)
a) Reciprocating pumps
b) Analytical columns in HPLC
c) Compare between TLC and paper chromatography
d) Detecting agent in TLC

SECTION - II

- Q.5 Attempt any **FIVE** of the following (10)
a) Give the importance of chamber saturation in HPTLC.
b) Give the advantages of band over spot applications in HPTLC.
c) Enlist the adulterants used in turmeric powder.
d) How will you determine the water content in milk sample?
e) What are critical temperature and critical pressure for SCF?
f) What is tailing and fronting in HPTLC?
- Q.6 a) Explain in detail the selection of adsorbent and mobile phase used in HPTLC. (07)
b) Discuss the various parts of SCF chromatography. (08)
- Q.7 a) Discuss the factors influencing the HPTLC separation and resolution of spots. (07)
b) Discuss the prevention of Food Adulteration Act and the responsibilities of Food Inspector. (08)
- Q.8 Write short Notes on **ANY THREE** (15)
a) Densitometric determination in HPTLC
b) Effect of pressure and temperature in SCF chromatography
c) Detection and visualization of band in HPTLC
d) Adulterants in vegetables
- * * * * *

PURUS - VI (2011 COURSE) : WINTER - 2014
SUBJECT : DOSAGE FORM DESIGN - III

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.** 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) Draw neat and labeled diagrams **WHEREVER** necessary.
- 4) Figures to the right indicate **FULL** marks.

SECTION - I

- Q.1** Attempt **ANY FIVE** of the following: [10]
- a) Define sterility and sterilization.
 - b) Enlist buffering agents used in SVPs.
 - c) Give LAL test.
 - d) Enlist physical monitoring of clean room.
 - e) Write the composition of fluid thioglycollate medium.
 - f) How Eye Ointments are sterilized
 - g) Enlist constituents of Blood
- Q.2** a) Discuss the formulation aspect of SVPs. Give its Quality Control test. [08]
b) Write the methods for preparation of water for injection and write its storage methods. [07]
- Q.3** a) Explain design, construction and working of HVAC system. [08]
b) Define pyrogen and how to identify and remove it from parenteral product. [07]
- Q.4** Write short notes on **ANY THREE** of the following: [15]
- a) Freeze dried products
 - b) Laminar air flow
 - c) Quality control test for HEPA
 - d) Parenteral Product- packaging Interaction.

SECTION - II

- Q.5** Attempt **ANY FIVE** of the following: [10]
- a) Write the composition of type I and II glass containers.
 - b) Why dextrose injection should be acidic in nature.
 - c) Name the plasma fraction.
 - d) What are the factors influencing intraocular bioavailability?
 - e) Write filtration and filling operations of parenterals.
 - f) Give formula for Eye Ointment
 - g) Mention different type of containers used for parenterals.
- Q.6** a) Discuss the quality control tests for glass containers. [08]
b) Define total parenteral nutrition. Write its indications, formulation and packaging. [07]
- Q.7** a) Discuss the composition of glass containers. [08]
b) Discuss in details FFS and blow film technology. [07]
- Q.8** Write short notes on **ANY THREE** of the following: [15]
- a) Plasma substitutes
 - b) Intraperitoneal dialysis fluid
 - c) Ocular inserts