

PURUS - V: APRIL/MAY 2014 (Sem Pattern)  
SUBJECT: PHARMACOGNOSY - II

Day: Wednesday  
Date: 07-05-2014

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

**N.B.**

- 1) Answer to the **TWO** sections should be written in **SEPARATE** answer books.
- 2) **Q.1 & Q.5** are compulsory out of the remaining attempt any **TWO** questions from each sections.
- 3) Black figures to the right indicate **FULL** marks
- 4) Neat diagram must be drawn **WHEREVER** necessary

**SECTION - I**

- Q.1** Solve any **FIVE** questions (10)
- a) Differentiate between pale catechu and black catechu
  - b) Give identification tests for Olive oil
  - c) Define isothiocyanate glycosides
  - d) Give the biological source, family and uses of Silimarin
  - e) Give identification tests for honey.
  - f) What is lecithin?
  - g) Give the adulterants of Senna
- Q.2** Answer the following questions
- a) Write an exhaustive note on carbohydrates. Give their biosynthesis, characteristics, classification and general identification tests. (08)
  - b) Give the pharmacognostic details of Kokum butter. (07)
- Q.3** Answer the following questions
- a) Describe the general and distinguishing characters of cardiotonic glycosides. (08)
  - b) Define and differentiate between hydrolysable tannins and condensed tannins with suitable examples. (07)
- Q.4** Write notes on (**Any THREE**) (15)
- a) Talc
  - b) Wild cherry bark
  - c) Cantharids
  - d) Acacia

P.T.O.

SECTION - II

- Q.5** Solve any **FIVE** questions (10)
- a) Define and differentiate between gums and mucilage.
  - b) Give identification tests for dextrin
  - c) Adulterants of Chirata
  - d) Differentiate between fixed oil, fats and waxes.
  - e) Give the biological source, family and uses of Momordica.
  - f) Differentiate between Arjuna bark and Ashoka bark
- Q.6** Answer the following questions
- a) Define glycoside give their biosynthesis, classification and identification. (08)
  - b) Give the pharmacognostic details and microscopical characteristics of Senna leaves. (07)
- Q.7** Answer the following questions
- a) Give detailed pharmacognostic account of Aloe and differentiate between Cape aloes and Zanziber aloes (08)
  - b) Discuss Myrobalan (07)
- Q.8** Write notes on (**Any THREE**) (15)
- a) Asbestos
  - b) Ginseng
  - c) Visnaga
  - d) Pectin

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**PURUS - VI (2011 COURSE): APRIL/MAY - 2014**  
**SUBJECT: PHARMACEUTICAL BIOTECHNOLOGY**  
**(INCLUDING MOLECULAR BIOLOGY)**

Day: Monday  
Date: 12.05.2014

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) 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 is a plasmid?
  - b) Write applications of Restriction-endonucleases.
  - c) What are Purins and Pyrimidins.
  - d) Differentiate between mRNA and tRNA.
  - e) Draw a neat diagram of an animal cell.
  - f) What is RNA dependent DNA polymerase?
  - g) What do you understand by junk DNA?
- Q.2** What is polymerase chain reaction? What are its applications? (15)
- Q.3** Describe in details the processes transcription and translation in a typical cell. (15)
- Q.4** Write short notes on **ANY THREE** of the following: (15)
- a) Significance of recombinant insulin
  - b) RNA splicing
  - c) Transformation
  - d) Okazaki fragments
  - e) Contributions of Oswald Avery

**SECTION - II**

- Q.5** Answer **ANY FIVE** of the following: (10)
- a) Define mutations.
  - b) Draw a neat diagram of stirred-tank reactor.
  - c) Name at least five industrially important Enzymes.
  - d) What is inoculum?
  - e) What is fermentation media?
  - f) What is point mutation?
  - g) Give a few examples of extremophils.
- Q.6** Discuss industrial applications and describe various techniques involved in enzyme immobilization. (15)
- Q.7** Describe different types and designs of bioreactors. (15)
- Q.8** Write short notes on **ANY THREE** of the following: (15)
- a) Enzyme applications in food industry
  - b) Whole-cell immobilization.
  - c) Downstream processing.
  - d) Mutations in strain improvement.
  - e) Spray drying

PURUS - VI: APRIL / MAY - 2014 (2011 Course)  
SUBJECT: PHARMACOGNOSY -II

Day: Tuesday  
Date: 13-05-2014

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

**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) Explain method of decoction.
  - b) Write principle of HPTLC.
  - c) Give four uses of Arnica?
  - d) Give details of successive solvent extraction.
  - e) What is percolation?
  - f) What do you understand by health foods?
- Q.2**
- a) What is basic principle of extraction? Discuss microwave assisted extraction and supercritical fluid extraction. (08)
  - b) What are nutraceuticals? Detail the significance of garlic and onion. (07)
- Q.3**
- a) Justify role of TLC in herbal analysis? Also give benefits of HPTLC over TLC (08)
  - b) Write about the current status of nutraceuticals in commerce. Give important components of nutraceuticals. (07)
- Q.4** Write short notes on any **THREE** of the following: (15)
- a) Continuous hot extraction.
  - b) Cucumber
  - c) General extraction method for alkaloids.
  - d) Types of extracts and their standardization

**SECTION-II**

- Q.5** Attempt any **FIVE** of the following: (10)
- a) Give advantages of suspension culture.
  - b) Mention any four growth parameters in suspension culture.
  - c) What is role of face pack?
  - d) Mention advantages of herbal cosmetics over synthetic cosmetics.
  - e) What is standardization of herbal drug?
  - f) What is totipotency?
- Q.6**
- a) Describe in detail the skin care herbal cosmetics and their evaluation for quality. (08)
  - b) What is principle of plant tissue culture? Give requirements for set up of plant tissue culture laboratory. (07)
- Q.7**
- a) What are various parameters of WHO guidelines for quality control of herbal drugs? (08)
  - b) Give various herbal drugs useful in hair care cosmetics. Elaborate the significance of the products using examples of formulations. (07)
- Q.8** Write short notes on any **THREE** of the following: (15)
- a) Culture media composition for plant tissue culture.
  - b) Regulatory affairs related to herbal drugs.
  - c) Strategies for enhanced production of phytopharmaceuticals

PURUS - VI (2011 COURSE) : APRIL / MAY - 2014  
SUBJECT : MEDICINAL CHEMISTRY - II

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 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** giving two uses of each : (10)
- a) Thiomyal sodium
  - b) Cocaine
  - c) Nikethamide
  - d) Amphetamine
  - e) Nitrazepam
  - f) Valproic acid
- Q.2 a) Discuss chemistry of hallucinogens. (05)
- b) What is preanaesthetic medication? Explain giving examples. (05)
- c) Discuss mode of action of general anesthetics. (05)
- Q.3 a) Discuss SAR of barbiturates and benzodiazepines. (10)
- b) Explain physiology of sleep and mechanism of action of barbiturates. (05)
- Q.4 Write short notes on any **THREE** of the following: (15)
- a) Acetylation and Methylation
  - b) Cytochrome P<sub>450</sub> and oxidation
  - c) Factors affecting metabolism
  - d) Anticonvulsants
  - e) analeptics

P. T. O.

**SECTION -II**

- Q. 5** Attempt any **FIVE** questions of the following: **(10)**
- a) Draw structures of any two ester based local anesthetics.
  - b) Classify and enlist various drugs used as anti-psychotic drugs.
  - c) Comment on the use of Rauwolfia alkaloids as anti- psychotic drugs.
  - d) Outline the synthesis of Diazepam.
  - e) Classify local anaesthetics with examples.
  - f) Differentiate between bioprecursors and carrier-linked prodrugs.
  - g) Write MOA of neuroleptic drugs.
- Q. 6** a) Discuss in detail SAR and MOA of MAO inhibitors. **(10)**
- b) Outline synthesis of : **(05)**
- i) Chlorpromazine
  - ii) Haloperidol
- Q. 7** a) Write an account of SAR tricyclic anti-depressant drugs. **(10)**
- b) Write in detail about pharmacokinetic applications of prodrugs. **(05)**
- Q. 8** Write short notes on any **THREE** of the following: **(15)**
- a) Mode of action of anxiolytic drugs
  - b) SAR of phenothiazines
  - c) Mode of action of local anesthetics
  - d) Outline synthesis of procaine

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SUBJECT : DOSAGE FORM DESIGN - III

Day : Wednesday  
Date : 30-04-2014

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) 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) Write sterilization method/s for atropin sulphate, testosterone propionate, oxytocin and heparin injections.
  - b) Enlist antimicrobial preservatives used in SVPs.
  - c) Define impurity index and homogeneity index.
  - d) Write about Air cleanliness levels in sterile products manufacturing.
  - e) Write the composition of Soyabean - casein digest medium.
  - f) What do you mean by fumigation?
  - g) Write Hot DOP test.
- Q.2** a) Explain the process of freeze dried parental products. Give its advantages. [08]  
b) Explain design, construction and working of HEPA filter unit. How will you do its evaluation? [07]
- Q.3** a) What are the sources for particulate matter in parentral? Which methods are used to detect the same? [08]  
b) Write the working principle of various types of laminar air flow and its testing. [07]
- Q.4** Write short notes on **ANY THREE** of the following: [15]
- a) HVAC system
  - b) Method to remove pyrogen from parentral product
  - c) Layout of injecting manufacturing area
  - d) Steam sterilization

**SECTION - II**

- Q.5** Attempt **ANY FIVE** of the following: [10]
- a) Write the composition of type -I and III glass containers.
  - b) Why benzalkonium chloride preservative is used along with disodium EDTA in LVPS?
  - c) Define Siliconization and Coring.
  - d) Write the composition of dialysis fluid.
  - e) Mention difference between LPVs and SVPs.
  - f) Write the additives used in rubber container.
  - g) Write the filtration and filling operation of parentrals.
- Q.6** a) Explain types and formulation of LVPs. Give quality control tests of it. [08]  
b) Discuss Quality Control test for rubber closures. [07]
- Q.7** a) Discuss classification, composition of glass containers and distinguish between Type - I and Type - II [08]  
b) Discuss formulation, manufacturing techniques, evaluation and Sterilization of Eye Ointment [07]
- Q.8** Write short notes on **ANY THREE** of the following: [15]
- a) Dried human plasma
  - b) Plastics as packaging material for parentrals
  - c) Contact lens

PURUS-VI - (2011 COURSE) APRIL/MAY 2014  
SUBJECT: PHARMACEUTICAL ANALYSIS – IV

Date: *Monday*  
Day: *28.04-2014*

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) How thin layer chromatography is carried out? How would you locate a compound on a chromatoplate?  
b) Name the components of the typical HPLC unit.  
c) Discuss the limitations of thin layer chromatography.  
d) Write briefly procedure for column packing in HPLC.  
e) How adsorbents are selected in TLC?  
f) How particle size affects resolution?
- Q.2 a) Explain in detail various methods for preparations of chromatoplates. (07)  
b) Discuss in detail pumping systems used in HPLC. (08)
- Q.3 a) Discuss in detail injector systems in HPLC. (07)  
b) Write a note on Ion exchange TLC and adsorption TLC. (08)
- Q.4 Write short Notes on **ANY THREE** (15)  
a) Refractive index detector  
b) Gradient separation and Isocratic separation.  
c) Applications of TLC  
d) Visualizing agent in TLC

**SECTION -II**

- Q.5 Attempt any **FIVE** of the following (10)  
a) Give the Advantages of HPTLC.  
b) What is HETP?  
c) Give the properties of CO<sub>2</sub> gas as a SCF.  
d) Give the adulterants used in tea powder.  
e) What is supercritical fluid in SFC?  
f) What is activation of HPTLC plate & give its importance.
- Q.6 a) Discuss the quantitation techniques used in HPTLC. (07)  
b) Discuss the Detectors used in of SCF Chromatography. (08)
- Q.7 a) What are the major components of milk? Discuss the various chemical tests for checking the adulteration in milk. (07)  
b) Enlist and explain the steps involved in HPTLC development. (08)
- Q.8 Write short Notes on **ANY THREE** (15)  
a) Applications of SCF chromatography  
b) RP phase HPTLC  
c) Determination of artificial colors in vegetables  
d) Compare between spot and band application
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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) 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) Discuss the adverse effects of phenytoin.
  - b) Discuss the stages of general anesthesia.
  - c) Enlist the techniques of local anesthesia.
  - d) Define epilepsy and classify antiepileptic drugs.
  - e) Classify anti Parkinson's drugs.
  - f) Enlist the CNS stimulant drugs. Explain mechanism of amphetamine.
- Q.2** a) Classify sedative-hepnotics and explain mechanism of action therapeutic effects, adverse effect and contraindications of benzodiazepines. **[08]**
- b) Describe in detail pharmacology of commonly used anti-Parkinson's drugs. **[07]**
- Q.3** a) Discuss in detail mechanism of action therapeutic effects, adverse effect and contraindications of tricyclic antidepressant. **[08]**
- b) Classify Antipsychotic agents. Give detail pharmacology of phenothiazines. **[07]**
- Q.4** Write short notes on **ANY THREE** of the following: **[15]**
- a) Preanesthetic medications
  - b) MAO inhibitors
  - c) Opioids
  - d) Antimaniac drugs

**SECTION - II**

- Q.5** Attempt **ANY FIVE** of the following: **[10]**
- a) Enlist the actions of prostaglandins in platelet.
  - b) Enlist the role of thromboxane in blood vessels.
  - c) Name the receptors of prostaglandins.
  - d) Name preferential COX-2 inhibitors.
  - e) Define antidote. Give two examples.
  - f) Enlist the symptoms of mercury poisoning.
- Q.6** a) Classify NSAIDs. Explain the pharmacological actions, adverse effects and uses of aspirin. **[08]**
- b) Classify antirheumatoid drugs. Explain in detail the pharmacology of DMARDs. **[07]**
- Q.7** a) Explain in detail the signs, symptoms and treatment of acute and chronic lead poisoning. **[08]**
- b) Explain in detail the general measures to be taken in treatment of poisoning. **[07]**
- Q.8** Write short notes on **ANY THREE** of the following: **[15]**
- a) Leukotrienes
  - b) Topical NSAIDs
  - c) Uricosuric agents
  - d) Treatment of arsenic poisoning