

PURUS – V (SEMESTER PATTERN): APRIL / MAY 2010
SUBJECT: PHARMACOGNOSY-II

Day : *Monday*
Date : *17-05-2010*

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

N.B.:

- 1) **Q. No. 1 & 5 are COMPULSORY.** Out of remaining questions solve **ANY TWO** questions from Section I and **ANY TWO** questions from Section –II
- 2) Figures to the right indicate **FULL** marks.
- 3) Answer to the two sections should be written in **SEPARATE** answer books.
- 4) Draw neat and labeled diagrams **WHEREVER** necessary.

SECTION-I

- Q.1** Attempt **ANY FIVE** of the following: [10]
- a) How do you detect the purity of Honey?
 - b) What is meant by Saponification value?
 - c) Give biological source, active constituents and uses of Arjuna.
 - d) Differentiate between Phlobatannins and pyrogallotannins.
 - e) Give Chemical test for Tannins.
 - f) List out adulterants of Isapgol?
- Q.2** a) Describe the general and distinguishing characters of fixed oils, essential oils and waxes. Write short note on solubility of fats. [08]
- b) What are Gums? How are they classified? How does Gum acacia differ from Tragacanth? [07]
- Q.3** a) What are Tannins? Differentiate between Hydrolysable and condensed tannins. [08]
- b) What are starches? Describe microscopical structure, uses and method of preparation of any one starch. [07]
- Q.4** Write short notes on **ANY THREE** of the following: [15]
- a) Kaolin IP
 - b) Sesame oil
 - c) Differences between Pale and Black Catechu
 - d) Alginate

SECTION-II

- Q.5** Attempt **ANY FIVE** of the following: [10]
- a) Differentiate between Alexandrian Senna and Indian Senna.
 - b) What are Aloinosides?
 - c) Give biological source, active constituents, and uses of Psoaralia.
 - d) What is prepared digitalis?
 - e) What are Isothiocyanate glycosides?
 - f) What are Bitter Glycosides?
- Q.6** a) Define Glycosides. Outline its classification. What are steroidal glycosides? Write a note on *Solanum khaisanum*. [08]
- b) Give outline of drugs obtained from Mineral sources. What is Talc IP? [07]
- Q.7** a) Describe cultivation, collection and drying of Aloe. [08]
- b) Give a detailed account on preparation, identification and applications of Bentonite. [07]
- Q.8** Write short notes on **ANY THREE** of the following: [15]
- a) T.S of Liquorice

PURUS -VI (SEMESTER PATTERN): APRIL / MAY 2010
SUBJECT: PHARMACOLOGY – III

Day : *Thursday*
Date : *13-05-2010*

Time: *10:00 AM TO 1:00 PM.*
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 two 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) Enumerate anti-anxiety drugs.
 - b) Give examples of analeptics.
 - c) In which surgical conditions lignocaine adrenaline combination is contraindicated.
 - d) Enumerate stages of general anesthesia.
 - e) Enlist uses of morphine.
 - f) Give examples of atypical antidepressants.
 - g) Which is the specific antagonist of benzodiazepine?
- Q.2**
- a) Classify opioid analgesics. Describe the pharmacological actions, contraindications and precautions of morphine use. [08]
 - b) Classify neuroleptics. Describe the pharmacological actions and adverse effects of chlorpromazine. [07]
- Q.3**
- a) Classify local anesthetics. Describe the various routes of administration of local anesthetics. [08]
 - b) Describe mechanism of action of barbiturates. What are their disadvantages as sedative hypnotic drugs? [07]
- Q.4** Write short notes on **ANY THREE** of the following: [15]
- a) Carbamazepine
 - b) Benserazide
 - c) New antiepileptics
 - d) Intravenous general anesthetics

SECTION - II

- Q.5** Answer **ANY FIVE** of the following: [10]
- a) Define antidote give examples.
 - b) Enumerate main symptoms of acute lead poisoning.
 - c) Give example of oral prostaglandin.
 - d) In which conditions aspirin is contraindicated in children.
 - e) Enlist symptoms of acute mercury poisoning.
 - f) What are the side effects of prostaglandins?
- Q.6**
- a) Discuss the mechanism of action, adverse effects, interactions, precautions and contraindications of allopurinol. [08]
 - b) Describe the mechanism of actions and uses of aspirin. [07]
- Q.7**
- a) Explain the general principles of treatment of acute toxicity and acute poisoning. [08]
 - b) Describe signs, symptoms, and treatment of acute poisoning with arsenic. [07]
- Q.8** Write short notes on **ANY THREE** of the following: [15]
- a) Thromboxane

PURUS - VI (Semester Pattern) April/May-2010
SUBJECT: PHARMACEUTICAL BIOTECHNOLOGY
(Including Molecular Biology)

Day : Saturday
Date : 15-05-2010

Time : 10:00 AM TO 1:00 PM.
Max. Marks : 80

N.B.:

- 1) Q.No.1 and 5 are **COMPULSORY**. Out of remaining questions attempt **ANY TWO** 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 to the question.

SECTION - I

- Q.1** Attempt **ANY FIVE**: [10]
- a) Give complementary sequence of GATTCAAGCCTTATCAT.
 - b) What is a primer?
 - c) Draw and label double helix.
 - d) What is a chromosome?
 - e) Define plasmid.
 - f) What is ligation?
 - g) Define mutation.
- Q.2** What do you understand by rDNA technology? Give various uses of the same in pharmacy. [15]
- Q.3** Elaborate DNA as master molecule of life and describe Griffith's experiment that established DNA as the transforming principle. [15]
- Q.4** Write short notes on **ANY THREE**: [15]
- a) Taq DNA polymerase
 - b) Principle of gel electrophoresis
 - c) DNA hybridization
 - d) Plasmid as vector

SECTION - II

- Q.5** Attempt **ANY FIVE**: [10]
- a) Give any two methods of immobilization of enzymes.
 - b) What is continuous fermentation?
 - c) Give applications of amylase.
 - d) Differentiate encapsulation and adsorption.
 - e) Enlist aims of protein engineering.
 - f) What is site directed mutagenesis?
 - g) Define enzyme.
- Q.6** Discuss the salient achievements already made and future prospects in protein engineering. [15]
- Q.7** Describe enzymes as biocatalyst and discuss various factors that affects rate of enzymatic reaction. [15]
- Q.8** Write short notes on **ANY THREE**: [15]
- a) Fluidized bed fermentation
 - b) Single cell protein
 - c) Limitation of enzyme immobilization

PURUS-VI (SEMESTER PATTERN) : APRIL/ MAY 2010
SUBJECT : MEDICINAL CHEMISTRY-II

Day : Tuesday
Date : 04-05-2010

Time : 10:00 AM TO 1:00 PM.
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** Give structure and explain mode of action of any **FIVE** drugs of following: (10)
- a) Fluphenazine
 - b) Tranylcypromine sulfate
 - c) Doxepin
 - d) Alprazolam
 - e) Phenobarbital
 - f) Spironolactone
 - g) Phensuximide.
- Q.2** a) Discuss SAR and chemistry of benzodiazepins and list out their important therapeutic applications. (07)
- b) Classify antidepressants and give an exhaustive account of tricyclic antidepressants. (08)
- Q.3** a) Classify sulfonamides and add an exhaustive note on thiazides. (07)
- b) Write synthesis of (08)
- | | |
|--------------------|-------------------|
| i) Ethacrynic acid | ii) Acetazolamide |
| iii) Meprobamate | iv) Haloperidol. |
- Q.4** Write short notes on any **THREE** of the following: (15)
- a) Anticonvulsants for grand mal epilepsy
 - b) Barbiturate chemistry and sedative action
 - c) High ceiling diuretics
 - d) Phenothiazines
 - e) Purines and heterocyclic diuretics.

P.T.O.

SECTION-II

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

- a) Explain hydrolytic reactions of metabolism with suitable example.
- b) Define and classify drug metabolic pathways.
- c) Draw any two structures from Phenylethylamine class of analeptics.
- d) Give broad mechanism of action of CNS stimulants.
- e) Give any two structures from aminoalkyl esters of p-aminobenzoic acid class of local anesthetics.
- f) Differentiate between the local anesthetics and general anesthetics.
- g) Give the various stages of general anesthesia.

Q.6 Give an exhaustive account of oxidation-reduction metabolic pathways with examples. **(15)**

Q.7 a) Classify local anesthetics with structure. Discuss their mode of action, SAR and therapeutic uses. **(10)**

b) Outline synthesis of procaine and benzocaine **(05)**

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

- a) Chemistry of General anaesthetics
- b) Hallucinogens
- c) Factors affecting drug metabolism
- d) Analeptics
- e) Drugs of abuse

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PURUS-VII: (Semester Pattern) April-May 2010
SUBJECT: PHARMACEUTICAL ANALYSIS-IV

Day : Friday
Date : 07-05-2010

Time: 2.00 P.M. To 5.00 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 Section-I and Section-II.
- 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** of the following: [10]
- a) Write the different regions of EMR.
 - b) Explain the terms excitation and relaxation in spectroscopy.
 - c) Name the different detectors for UV
 - d) Write advantages and disadvantages of grating monochromators.
 - e) Write advantages and disadvantages of a Barrier Layer Cell.
 - f) What are the charge transfer transitions?
 - g) What are the different methods of quantitative analysis by UV?
- Q.2** a) Write the construction and working of a PMT. [07]
b) What are the different transitions in UV spectroscopy? Explain transitions involving pi and n electrons. [08]
- Q.3** a) State and explain Beer Lambert law. [08]
b) Write a note on deviations of Beer Lambert Law. [07]
- Q.4** Write short notes on **ANY TWO** of the following: [15]
- a) Different methods of spectroscopy.
 - b) PDA detector in UV
 - c) Spectrophotometric titrations.

SECTION-II

- Q.5** Write short notes on **ANY FIVE** of the following: [10]
- a) Fluorimetry is more sensitive than UV
 - b) Finger print region in IR
 - b) Nephelometry is used for dilute solutions
 - d) Temperature affects fluorescence intensity
 - e) Fluorescence is instant while phosphorescence is delayed
 - f) IR is not used for quantitative analysis.
 - g) Role of attenuator in IR spectroscopy
- Q.6** a) Explain Nepheloturbidimetry giving principle instrumentation and applications. [10]
b) Write different molecular vibrations in IR. [05]
- Q.7** a) What are the factors affecting fluorescence intensity? Explain. [08]
b) Give applications of fluorimetry. [07]
- Q.8** Write short notes on **ANY TWO** of the following: [15]
- a) FT-IR

PURUS –VIII (SEMESTER PATTERN): APRIL / MAY 2010
SUBJECT: DOSAGE FORM DESIGN – III

Day : *Wednesday*
Date : *12-05-2010*

Time: *2:00 P.M. To 5:00 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 **SEPARATE** answer books.
- 3) Figures to the right indicate **FULL** marks.

SECTION – I

- Q.1** Answer **ANY FOUR** of the following: [10]
- a) Enumerate the merits of controlled release dosage form.
 - b) Draw neat diagram of Alzet osmotic pump.
 - c) What is pH activated DDS?
 - d) Explain Dynamics of GI Tract.
 - e) What is Nitro Dur system?
 - f) What are magnetically activated DDS?
- Q.2** Enumerate and discuss the principle, formulation and give biopharmaceutical consideration of Iontophoretic DDS. [15]
- Q.3** Discuss giving example the principle, formulation and kinetics of osmotic pressure controlled DDS. [15]
- Q.4** Write short notes on **ANY TWO** of the following: [15]
- a) Feed back regulated DDS
 - b) Hybrid Drug Delivery System
 - c) Mucoadhesive DDS
 - d) Multiunit Dosage forms.

SECTION – II

- Q.5** Answer **ANY FOUR** of the following: [10]
- a) Give a schematic representation showing anatomy of skin.
 - b) Give composition of nasal secretion.
 - c) State the applications of Niosomes.
 - d) Show with the help of diagram different components of aerosol packaging.
 - e) What are different classes of antibodies?
 - f) State the applications of metered dose inhalers.
- Q.6** Discuss the formulation, manufacturing and quality control of pharmaceutical aerosols. [15]
- Q.7** a) Discuss physico-chemical parameters influencing development of nasal DDS. [10]
b) Comment in brief technologies used in development of transdermal DDS. [05]
- Q.8** Write short notes on **ANY TWO** of the following: [15]
- a) Aerodynamics of aerosols
 - b) Formulations of Niosomes
 - c) Formulations of liposomes
 - d) Rectal drug delivery formulations