

B-Pharm - III

Semi - VI - 2017

PURUS - VI (2011 COURSE) : SUMMER - 2017
SUBJECT : MEDICINAL CHEMISTRY - II

Day : Saturday
Date : 22/04/2017

Time 10.00 AM TO 01.00 PM
Max. Marks : 80

N.B.

- 1) Q.1 and Q.5 are **COMPULSORY**. Out of the remaining, attempt any **TWO** questions from Section - I and any **TWO** questions from Section - II.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw diagrams, structures and give reactions wherever necessary.

SECTION - I

- Q.1** Attempt any **FIVE** questions of the following: (10)
- a) Draw structures of any two triazolo-benzodiazepines.
 - b) Outline synthesis and two uses of trimethadione.
 - c) Explain mode of action of anticonvulsants.
 - d) Explain physiology of sleep in brief.
 - e) Explain aromatic hydroxylation.
 - f) Draw structures of any two ultra-short acting barbiturates.
 - g) Explain the term enzyme induction with examples.
- Q.2** a) What is metabolism? Discuss characteristic features of Phase - I and Phase - II metabolism and add a schematic representation of their summary. (07)
- b) Write in details about glucuronic acid and sulfate conjugation. (08)
- Q.3** a) Classify general anesthetics with one representative structure from each class and explain stages of general anesthesia. (05)
- b) Discuss chemistry of anticonvulsants. (05)
- c) With a short note on nonbarbiturates. (05)
- Q.4** Write short notes on any **THREE**: (15)
- a) Barbiturates
 - b) Classification of epilepsy and anticonvulsants
 - c) Reduction and Hydrolytic pathways
 - d) Mode of action of general anesthetic
 - e) Analeptics

SECTION - II

- Q.5** Answer the following any **FIVE**: (10)
- a) Classify Neuroleptics with examples.
 - b) Outline the synthesis of Haloperidol with its category.
 - c) Outline the synthesis of Imipramine with its uses.
 - d) Draw any two structures of Tricyclic antidepressants.
 - e) Draw any two structures of local anesthetics belonging to benzoic acid ester class.
 - f) Outline the synthesis of Diazepam.
 - g) Explain the terms epidural and caudal anesthesia.
- Q.6** a) Define and classify anxiolytics. (05)
- b) Describe SAR of Benzodiazepine class of anti-anxiety agents. (05)
- c) Comment on mode of action and therapeutic uses of Benzodiazepines. (05)
- Q.7** a) Classify antidepressants in details with one representative structure from each class. (05)
- b) Comment on SAR of phenothiazines. (05)
- c) Discuss chemistry and SAR of tricyclic antidepressants. (05)
- Q.8** Write short note on any **THREE**: (15)
- a) SAR of local anaesthetics
 - b) Classification of prodrugs
 - c) MAO inhibitors
 - d) Pharmacokinetic applications of prodrugs
 - e) Outline the synthesis of Benzocaine and Lignocaine
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PURUS -VI (2011 COURSE) : SUMMER - 2017
SUBJECT : PHARMACEUTICAL ANALYSIS - IV

Day : Tuesday
Date : 25/04/2017

Time : 10.00 AM TO 01.00 PM
Max. Marks : 80

N. B. :

- 1) **Q.No.1 and Q. No.5 are COMPULSORY.** Out of the 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.

SECTION - I

- Q.1** Solve **Any FIVE** of the following : **(10)**
- a) Why is thin layer chromatography superior to other types of chromatographic methods?
 - b) What are the advantages of High performance Liquid Chromatography?
 - c) How solvents are selected in TLC?
 - d) What are the characteristics of detectors used in HPLC?
 - e) Compare between adsorption TLC and partition TLC.
 - f) Give important pharmaceutical applications of HPLC.
- Q.2** a) Discuss in detail various types of pumps used in HPLC. **(07)**
- b) Describe the various techniques used for the preparation of chromatoplates in TLC. **(08)**
- Q.3** a) Explain the various sample injection systems in HPLC. **(07)**
- b) Discuss the different methods used for locating the spots in TLC. **(08)**
- Q.4** Write short notes on **Any THREE** of the following : **(15)**
- a) Refractive index detector
 - b) Compare between HPLC and TLC
 - c) Reverse phase partition TLC
 - d) Applications of TLC

P.T.O.

SECTION – II

- Q.5** Solve **Any FIVE** of the following : (10)
- a) What is critical point in supercritical fluid chromatography?
 - b) Define the terms HETP and theoretical plate.
 - c) What are the advantages of supercritical fluid chromatography over HPLC?
 - d) Explain the term retardation factor and capacity factor.
 - e) Give the properties of supercritical fluids.
 - f) What do you mean by Edge effect in chromatography?
- Q.6** a) Give the various applications of HPTLC. (07)
- b) Discuss in detail the steps involved in HPTLC development. (08)
- Q.7** a) Discuss in detail the methods for the determination of adulterants in dairy products. (07)
- b) Discuss in detail the instrumentation of supercritical fluid chromatography. (08)
- Q.8** Write short notes on **Any THREE** of the following : (15)
- a) Role of food inspector in analysis of food products
 - b) Applications of super critical fluid chromatography
 - c) Quantitation techniques in HPTLC
 - d) Determination of adulterants in turmeric products

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PURUS-VI (2011 COURSE): SUMMER - 2017
SUBJECT: DOSAGE FORM DESIGN-III

Day: Saturday
Date: 29/04/2017

Time: 10.00 AM TO 01.00 PM
Max. Marks: 80

N.B:

- 1) Q.No.1 and Q. No.5 are **COMPULSORY**.
- 2) Attempt **ANY TWO** questions from each section.
- 3) Use separate answer sheets for both the sections.
- 4) Figures to the right indicate **FULL** marks.

SECTION-I

- Q.1** Solve **ANY FIVE** of the following: **(10)**
- a) What is D value in sterilization?
 - b) Show diagrammatically various environmental zones.
 - c) State the significance of flow properties of solids in SVP.
 - d) Explain clean in place and steam in place.
 - e) How antioxidants are selected?
 - f) Why ethylene diamine is necessary in aminophylline injection?
 - g) Discuss leakage test of ampoules.
- Q.2** a) Give a layout of a parenteral section and discuss the HVAC systems. **(08)**
- b) Comment on various additives in SVP. **(07)**
- Q.3** a) Discuss various routes of parenteral drug administration. **(08)**
- b) Give an account on - **(07)**
- i) Sterility testing
 - ii) LAL testing
- Q.4** Write notes on **ANY THREE** of the following: **(15)**
- a) Formation of sterile suspension
 - b) Freeze dried products
 - c) Sterilization by radiation
 - d) Isotonicity testing

P.T.O.

SECTION-II

- Q.5** Solve **ANY FIVE** of the following: (10)
- a) What is siliconization of glass containers?
 - b) Give the formula for Ringer lactate solution.
 - c) Calculate millimoles/ liter of 0.9% w/v NaCl solution.
 - d) Why 15% mannitol solution is warmed before use?
 - e) 5% dextrose solutions are stored in Type I glass containers-give reason.
 - f) Give the composition of tear film in eye.
 - g) What are ocular inserts? Give one example.
- Q.6** a) Discuss formulation principles of various large volume parenteral. (08)
- b) Write a note on IV admixtures. (07)
- Q.7** a) Draw a neat diagram of Extrusion screw and discuss flat sheet extrusion. (08)
- b) Discuss formulation of elastomeric closures. (07)
- Q.8** Write notes on **ANY THREE** of the following: (15)
- a) Mechanical and optical properties of plastic containers
 - b) Sterility and pyrogen testing
 - c) Dry serum
 - d) Ophthalmic ointments

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PURUS – VI: (2011 COURSE): SUMMER - 2017
SUBJECT: PHARMACOLOGY – III

Day: Wednesday
Date: 03/05/2017

Time: 10.00 AM TO 01.00 PM
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.

SECTION – I

Q.1 Answer Any **FIVE** of the following:

(10)

- a) Classify anti-anxiety drugs. Give examples.
- b) Classify opioid analgesics.
- c) Enlist the techniques of local anaesthesia.
- d) Define depression. Give examples of anti-depressants.
- e) Define status epilepticus.
- f) Define bipolar disorders. Give examples of drugs for treatment of bipolar disorder.
- g) Classify general anaesthetics.

- Q.2** a) Classify anti-Parkinson's drugs. Explain the role of anti-cholinergics in treatment of Parkinsonism. (08)
- b) What are cognition enhancers? Explain the pharmacology of cognition enhancers. (07)

- Q.3** a) Compare and contrast the mechanism of action, pharmacology, adverse effects and toxicity of benzodiazepines and barbiturates. (08)
- b) Classify local anesthetics. Explain in detail the pharmacology of amides used as local anesthetics. (07)

Q.4 Write Short notes on Any **THREE** of the following

(15)

- a) Preanaesthetic medication
- b) Selective Serotonin Reuptake Inhibitors
- c) Stages of general anaesthesia
- d) Phenothiazines

SECTION - II

Q.5 Answer Any **FIVE** of the following:

(10)

- a) What are eicosanoids? Give suitable examples.
- b) Define analgesics and antipyretics.
- c) Define toxicity. Give the composition of universal antidote.
- d) Enlist the adverse effects of selective COX-2 inhibitors.
- e) Classify drugs used for the treatment of gout.
- f) Enlist the signs and symptoms of acute barbiturate poisoning.
- g) Describe the mechanism of lead poisoning.

P.T.O.

- Q.6 a) Classify NSAIDs. Describe in detail pharmacology and adverse effects of non-selective COX inhibitors. (08)
b) Describe in detail the pharmacotherapy of rheumatoid arthritis. (07)
- Q.7 a) Explain the biosynthesis of prostaglandins and leukotrienes. Describe the pathophysiological role of prostaglandins. (08)
b) Explain the general principles of treatment of acute poisoning. (07)
- Q.8 Write Short notes on Any **THREE** of the following (15)
a) Mercury poisoning
b) Salicylates
c) Treatment of barbiturate poisoning
d) Pharmacology of leukotrienes

PURUS- VI (2011 COURSE): SUMMER - 2017
SUBJECT: PHARMACEUTICAL BIOTECHNOLOGY
(INCLUDING MOLECULAR BIOLOGY)

Day: Friday
Date: 05/05/2017

Time: 10.00 AM TO 01.00 PM
Max Marks: 80

N.B:

- 1) Q.1 and Q.5 are **COMPULSORY**. Out of remaining answer any **TWO** Questions from each section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answer to each section should be written in **SEPARATE** answer book.

SECTION-I

- Q.1** Answer any **FIVE** of the following: (10)
- a) Draw a neat labeled diagram of a prokaryotic cell.
 - b) In a DNA analysis 60% Adenin was found, calculate cytosine content.
 - c) Enlist rDNA products available in the market.
 - d) What is primase?
 - e) Differentiate between DNA and RNA.
 - f) What is RNA dependent DNA polymerase?
 - g) What are histone proteins?
- Q.2** a) Describe molecular events during PCR amplification. (08)
b) Write a short note on PCR applications. (07)
- Q.3** Describe eukaryotic protein synthesis. (15)
- Q.4** Write note on **ANY THREE** (15)
- a) Frame-shift mutation
 - b) Mutation in sickle cell anemia
 - c) Griffith's experiment
 - d) RNA splicing

SECTION-II

- Q.5** Answer any **FIVE** of the following: (10)
- a) Define enzymes
 - b) What is a single cell protein?
 - c) Give applications of streptokinase
 - d) Enlist factors affecting enzyme reaction.
 - e) Differentiate encapsulation and adsorption.
 - f) What is a fermentation media?
 - g) Write different types of enzyme inhibitions.
- Q.6** a) What is protein engineering? What are its objectives? (07)
b) Describe various methods involved in site-directed mutagenesis. (08)
- Q.7** Describe different types of bioreactors. Explain their advantages and applications. (15)
- Q.8** Write note on **ANY THREE** (15)
- a) Applications of enzymes in food industry
 - b) Whole-cell immobilization
 - c) Microbes in extreme environments
 - d) Spray-drying

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PURUS – VI (2011 COURSE): ~~SUMMER~~ - 2017
SUBJECT: PHARMACOGNOSY-II

Day : Monday
Date : 08/05/2017

Time : 10.00 AM TO 01.00 PM
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** Attempt **ANY FIVE** of the following (10)
- a) Write two main chemical constituents present in Garlic and draw structure of the same.
 - b) Explain percolation.
 - c) What are neutraceuticals? Give examples.
 - d) What is maceration?
 - e) Write principle of HPLC.
 - f) Which are different advantages of column chromatography in Herbal drug analysis?
- Q.2** a) Write history, current status and commerce of neutraceuticals. (08)
b) Role of HPTLC in herbal drug analysis. (07)
- Q.3** a) Write note on Microwave assisted extraction. (08)
b) What is SFE? Also explain continuous hot extraction. (07)
- Q.4** Write note on **ANY THREE** of the following (15)
- a) Cucumber
 - b) Principle and applications of TLC
 - c) Onion
 - d) Arnica
 - e) Fenugreek

SECTION – II

- Q.5** Attempt **ANY FIVE** of the following (10)
- a) Define the term callus and totipotency.
 - b) Write composition of nutrient media used in PTC.
 - c) What is explant?
 - d) Which are different quality control parameters for face pack?
 - e) Write composition of herbal hair care product.
 - f) Which are different advantages of herbal cosmetics?
- Q.6** a) How will you control quality of herbal cosmetics? (08)
b) Role of growth hormone in PTC. (07)
- Q.7** a) Write current status of regulatory affairs related to herbal drugs. (08)
b) Write in detail composition of culture media along with example. (07)
- Q.8** Write note on **ANY THREE** of the following (15)
- a) Protoplast culture
 - b) Herbal skin care product
 - c) Production of Hair care products
 - d) History of tissue culture
 - e) Organization of tissue culture laboratory
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