

This question paper contains 3 printed pages]

QT—02—2023

FACULTY OF SCIENCE AND TECHNOLOGY

M. Pharm. (CBCS PCI) (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

Paper—MPL 101T

(Tuesday, 26-12-2023)

Time : 2.00 p.m. to 5.00 p.m.

Time—3 Hours

Maximum Marks—75

N.B. :— (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

(iii) Answer to the point only.

1. Answer the following questions :

10×2=20

(a) What is Bragg's equation ?

(b) Write importance of isoelectric focussing.

(c) Write application of AAS.

(d) Write relationship between dipole-moment and molecular vibrations.

(e) Give the factors affecting fluorescence.

P.T.O.

- (f) Enlist different types of signals obtained in NMR.
- (g) Enlist different analytical techniques used for drug excipients.
- (h) Write various detectors used in GC.
- (i) Write the principle of isoelectrophoresis.
- (j) Enlist various electronic transitions by absorption of UV in molecules.

2. Answer any *two* of the following : 2×10=20

- (a) Write in brief about conventional and F.T.I.R .
- (b) Write role of UV, IR, NMR and MS in structural elucidation with suitable example.
- (c) Write in detail about instrumentation, principle and applications of HPTLC.

3. Answer any *seven* of the following questions : 7×5=35

- (a) Write a short note on Immunoelectrophoresis.
- (b) What are factors of IR influencing vibrational frequencies ?
- (c) Explain with example spin-spin coupling and J constant.
- (d) What do you mean by cut-off wavelength for UV solvents ? Give its importance.

- (e) Discuss various rules which are helpful for prominent peak in Mass Spectrum.
- (f) Write a short note on ion exchange chromatography.
- (g) Write comparative advantages and disadvantages of GC.
- (h) What are the factors influencing fluorescence ?
- (i) Write principle and applications of X-ray diffraction.

This question paper contains 3 printed pages]

QT—11—2023

FACULTY OF SCIENCE AND TECHNOLOGY

M. Pharm. (CBCS PCI) (First Year) (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

Paper—MPL—102T

ADVANCE PHARMACOLOGY-I

(Thursday, 28-12-2023)

Time : 2.00 p.m. to 5.00 p.m.

Time—3 Hours

Maximum Marks—75

N.B. :— (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

(iii) Answer to the point only.

1. Answer the following :

10×2=20

(a) Write the mode of action of Hematinics.

(b) What is Epilepsy ?

(c) What are parasympathomimetics ? Give example.

(d) Define :

(i) Depression

(ii) Mania.

P.T.O.

- (e) What are narcotic analgesics ? Give example.
- (f) Enlist neurotransmitters involved in neurohumoral transmission of central nervous system.
- (g) Enlist the drugs used in treatment of Hypertension.
- (h) What are Diuretics ? Give example.
- (i) What are coagulants ? Give example.
- (j) Define :
 - (i) Sedatives
 - (ii) Hypnotics.

2. Answer any *two* of the following :

2×10=20

- (a) Write on physiologic role of :
 - (i) Enzyme linked proteins
 - (ii) G-protein coupled receptors.
- (b) Write on pharmacology of Acetylcholine in neurohumoral transmission of autonomic nervous system.
- (c) What is Epilepsy ? Classify the anti-epileptic drugs and write pharmacology of any *one* anti-epileptic drug.

WT

(3)

QT—11—2023

3. Answer any *seven* of the following :

7×5=35

- (a) Explain physiological role of serotonin.
- (b) Write a note on passive and active transport of drug absorption.
- (c) Explain pharmacotherapy of heart failure.
- (d) Describe pharmacology of Atropine.
- (e) What is arrhythmia ? Write its physiology.
- (f) What are Anticoagulants ? Write in short about Heparin.
- (g) Write a note on opioid receptors.
- (h) Write a note on Fibrinolytics.
- (i) What are Diuretics ? Write pharmacology of loop diuretics.

QT—11—2023

3



This question paper contains 3 printed pages]

QT—21—2023

FACULTY OF SCIENCE AND TECHNOLOGY

M. Pharm. (CBCS PCI) (First Year) (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

PHARMACOLOGICAL AND TOXICOLOGICAL SCREENING METHODS-I

MPL-103T

(Saturday, 30-12-2023)

Time : 2.00 p.m. to 5.00 p.m.

Time—3 Hours

Maximum Marks—75

N.B. :— (i) All questions are compulsory.

(ii) Answer to the point only.

(iii) Illustrate your answer with neat sketch wherever necessary.

1. Answer the following :

10×2=20

- (a) Enumerate the role of trasgenic animals models in preclinical research.**
- (b) Give the general principles of immunoassays.**
- (c) Write important screening methods for anxiolytic drugs.**
- (d) What are the methods of evaluation of immune assay agents ?**
- (e) What are aphrodisiacs ? Give important examples.**
- (f) Define bioassay. Give example for quantal response type of bioassay.**

P.T.O.

- (g) Enlist various screening methods for antihypertensive agents.
- (h) Define the term mutagenesis and carcinogenesis.
- (i) Enlist the functions of CPCSEA.
- (j) Write the procedure for in vivo-one antiulcer model.

2. Answer any *two* of the following : 2×10=20

- (a) Describe analgesic and anti-inflammatory screening methods.
- (b) Explain the methods employed for evaluating of antiasthmatic and antiallergic agents.
- (c) Describe the Hepatoprotective screening methods.

3. Answer any *seven* of the following : 7×5=35

- (a) What are the advantages and disadvantages of alternative experimental models ?
- (b) Describe the bioassay of vasopressin.
- (c) Discuss about CPCSEA guidelines for the usage of animals for experimental purpose.
- (d) Explain the screening model for wound healings.
- (e) Describe the models for antifertility and analgesic.

- (f) Explain in-vitro methods for the screening of free radical scavenging activity.
- (g) Discuss screening methods for anti-emetic and anti-diarrheal agent.
- (h) Write on in-vitro animal model for anticancer drugs.
- (i) Describe in-vivo models employed in the screening of antiarrhythmic and antianginal drugs.



This question paper contains 2 printed pages]

QT—31—2023

FACULTY OF SCIENCE AND TECHNOLOGY

M.Pharm. (CBCS PCI) (First Year) (First Semester) EXAMINATION

JANUARY, 2024

CELLULAR AND MOLECULAR PHARMACOLOGY

Paper MPL-104T

(Tuesday, 2-1-2024)

Time : 2.00 p.m. to 5.00 p.m.

Time—Three Hours

Maximum Marks—75

N.B. :— (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

(iii) Answers to the point only.

1. Answer the following :

20

- (a) Give the importance of SiRNA and MicroRNA.
- (b) What is JAK/STAT signaling pathway ?
- (c) Define biosimilars.
- (d) What is Micro-array technique ?
- (e) Write function of cell and its organelles.
- (f) Define necrosis and autophagy.
- (g) What is cyclic AMP and cyclic GMP ?
- (h) Define Genomics and Functionomics.
- (i) Enlist various types of gene transfer techniques.
- (j) What is gene sequencing ?

P.T.O.

WT

(2)

QT—31—2023

2. Answer any *two* of the following : 20

- (a) What is Gene therapy ? Give applications and recent advances in gene therapy.
- (b) Define immunotherapeutics. Give its types and applications in clinical practice.
- (c) Give principle, procedure and application of flow cytometry.

3. Answer any *seven* of the following : 7×5=35

- (a) Write a note on cell cycle and its regulation.
- (b) Describe ELISA and Western blotting.
- (c) Explain pharmacogenomics with its applications.
- (d) Give in detail classification of receptors.
- (e) Give principle and application of electrophoresis.
- (f) Explain how polymorphism affect drug metabolism.
- (g) Write a note on ligand gated Ionotropic Receptor.
- (h) Give principle and application of Recombinant DNA technology.
- (i) Write a note on cell culture technique.

QT—31—2023

2