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BM—37—2024

FACULTY OF SCIENCE & TECHNOLOGY

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

MARCH, 2025

CELLULAR AND MOLECULAR PHARMACOLOGY

Paper MPL-104T

(Wednesday, 19-3-2025) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (1) *All* questions are compulsory.

(2) Answer to the point only.

(3) Figures to the right indicate full marks.

1. Answer the following : 10×2=20

(*a*) Write about gene sequencing.

(*b*) Define apoptosis and necrosis.

(*c*) Define immunotherapeutics.

(*d*) What is gene mutation ?

(*e*) Define DNA electrophoresis.

(*f*) Define biosimilars.

(*g*) What is micro array technique ?

(*h*) Define NO & IP.

(*i*) Give importance of Si-RNA.

(*j*) Write importance of micro RNA.

P.T.O.

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

(*a*) Classify seceptor family and explain their molecular structure.

(*b*) What is meant by cell culture ? Give its types and give general procedure for cell culture.

(*c*) Write in detail about recombinant DNA technology and gene therapy with applications.

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

(*a*) Write on Immunotherapeutics.

(*b*) Explain pharmacogenomics with its applications.

(*c*) Explain gene mapping and clonning of disease gene.

(*d*) Write principle and applications of cell viability assay.

(*e*) Write a note on ELISA.

(*f*) Write a note on Wester blotting.

(*g*) Write a note on Cell cycle.

(*h*) Explain cellular death, regulation and its pathways.

(*i*) Give genetic variations in drug transporters.

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BM—25—2024

FACULTY OF SCIENCE & TECHNOLOGY

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

MARCH, 2025

PHARMACOLOGICAL AND TOXICOLOGICAL SCREENING METHODS—I

Paper MPL-103T

(Monday, 17-3-2025) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 Hours *Maximum Marks—75*

N.B. :— (1) *All* questions are compulsory.

(2) Answer to the point only.

(3) Draw a neat labelled diagram wherever necessary.

1. Answer the following questions : 10×2=20

(*a*) Define the terms euthanesia and anaesthesia.

(*b*) Write the application of Bioassay.

(*c*) Mention the screening methods for Antiasthmatics.

(*d*) Write the principle of PTZ induced convulsions.

(*e*) What are phlogistic agents ? Give its examples.

(*f*) List out the various techniques to induce hepatotoxicity.

(*g*) What are preclinical and clinical study ?

(*h*) Write the application of transgenic animals.

(*i*) Enlist the various screening methods for Antianxiety agents.

(*j*) What are inbreeding ?

P.T.O.

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

(*a*) Enlist the screening methods for antidiabetic agents. Discuss in detail any *two*.

(*b*) Enlist in-vitro and in-vivo screening methods for analgesic methods. Explain any *two* in-vivo screening methods.

(*c*) What is bioassy ? Explain the types of bioassay.

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

(*a*) Explain in detail Shay Rat models.

(*b*) Write the purpose and rational of Kidney 1 clip method for screening of antihypertensive.

(*c*) Write a note on LIPSCHITZ test.

(*d*) Explain any *two* methods used for screening of Immunosuppresive agents.

(*e*) Discuss in detail screening methods for antiparkinson agents.

(*f*) Write principles of GLP.

(*g*) Discuss in detail any *two* screening methods for antidepressant drugs.

(*h*) Enlist the screening methods for antidiarrheal agents. Explain any *one* model.

(*i*) Explain in detail the various CCSEA (CPCSEA) guidelines for animal house facility.

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BM—13—2024

FACULTY OF SCIENCE & TECHNOLOGY

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

MARCH, 2025

ADVANCED PHARMACOLOGY—I

(MLP-102T)

(Thursday, 13-3-2025) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 Hours *Maximum Marks—75*

N.B. :— (1) *All* questions are compulsory.

(2) Figures to the right indicate full marks.

(3) Draw appropriate diagrams or charts wherever necessary.

1. Answer the following : 10×2=20

(*a*) Enlist classical autocoids with examples.

(*b*) What are hematinics ? Give *two* examples.

(*c*) What is Psychoses ?

(*d*) What do you mean by Parkinsonism ?

(*e*) Enlist cardiovascular risk factors.

(*f*) Define fibrinolytics. Give *two* examples.

(*g*) What is redistribution of drug ?

(*h*) Define neurotransmitter. Give *two* examples.

(*i*) Define apparent volume of distribution.

(*j*) What is neurohumoral transmission ?

P.T.O.

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

(*a*) Define hypertension. Classify antihypertensive drugs. Write pharmacology of clonidine.

(*b*) What is absorption ? Discuss factors affecting absorption. Add a note on plasma protein binding.

(*c*) Define analgesics. Classify non-steroidal anti-inflammatory drugs. Write pharmacology of paracetamol.

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

(*a*) Discuss Renin-angiotensin-aldosterone system.

(*b*) Discuss pharmacology of benzodiazepines.

(*c*) What is histamine ? Discuss pharmacological actions of histamine.

(*d*) Discuss renal excretion of drug.

(*e*) Write steps involved in neurotransmission.

(*f*) Discuss actions of Acetylcholine.

(*g*) Write important types of cardiac arrhythmias.

(*h*) Discuss pharmacology of furosemide.

(*i*) What is Alzheimer's disease ? Classify drugs used in its treatment. Write mechanism of action of Rivastigmine.

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BM—04—2024

FACULTY OF SCIENCE & TECHNOLOGY

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

MARCH, 2025

MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

Paper MPL-101T

(Tuesday, 11-3-2025) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 Hours *Maximum Marks—75*

N.B. :— (1) *All* questions are compulsory.

(2) Figures to the right indicate full marks.

1. Attempt the following questions : 10×2=20

(a) Write applications of UV-spectroscopy in drug analysis.

(b) How quantum number is significant in NMR spectroscopy ?

(c) What is isotopic peak ?

(d) Differentiate between normal phase and reverse phase chromatography.

(e) What is affinity chromatography ?

(f) Write principle of capillary electrophoresis.

(g) State Bragg's law.

(h) Give principle of AAS.

(i) Write applications of DTA.

(j) What are possible vibration modes in 3 atomic molecule ?

P.T.O.

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

(*a*) With a neat labelled diagram, explain the construction and working of double beam UV-visible spectrophotometer.

(*b*) Explain the principle and instrumentation of NMR spectroscopy.

(*c*) Explain methodology and principle of DTA.

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

(*a*) Differentiate between dispersive and FT-IR with diagram.

(*b*) Discuss the various interferences in flame emission spectroscopy.

(*c*) Write a short note on ^{13}C-NMR and spin-spin coupling.

(*d*) Discuss briefly about FAB and chemical ionization mass spectroscopy.

(*e*) Write a note on detectors used in HPLC.

(*f*) Describe principle and instrumentation of ion exchange chromatography.

(*g*) Write a note on principle and working of zone electrophoresis.

(*h*) Discuss experimental parameters used in DSC.

(*i*) Discuss briefly about X-ray diffraction method.