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HQ—04—2022

FACULTY OF PHARMACEUTICAL SCIENCE

M.Pharm. (First Semester) EXAMINATION

MARCH/APRIL, 2023

MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

Paper-MPL-101-T

(Thursday, 16-03-2023)

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) Answer to the point only.

1. Answer the following questions :

10×2=20

(a) Differentiate between stationary phase of HPTLC and TLC.

(b) Mention various types of columns used in HPLC.

(c) State Bragg's law.

(d) What do you mean by R_f value & R_t value ?

(e) Give the ideal properties of carrier gas used in GC.

(f) Write the limitation of Atomic Absorption Spectroscopy.

(g) What is HETP ?

(h) Enlist the analytical techniques used for bioanalytical studies.

(i) Define and classify ion exchange resins.

(j) What are important parameters of X-ray diffraction ?

2. Answer any two of the following :

2×10=20

(a) What are modes of molecular vibration ? Explain factors affecting molecular frequencies.

(b) Write in detail about instrumentation principle and working of NMR Spectroscopy.

(c) Explain various types of ionization techniques used in Mass Spectroscopy.

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3. Answer any *seven* of the following :

7×5=35

- (a) What is chemical shift ? Enlist factors influencing on chemical shift.
- (b) Write a short note on Immuno-electrophoresis.
- (c) Enlist different columns used in GC with suitable examples.
- (d) What do you mean by cut-off wavelength for UV solvents ? Give its importance.
- (e) Explain role of spectroscopy and chromatography in pharmacology of drugs.
- (f) Give the interpretation rule of IR Spectrum.
- (g) Discuss instrumentation of spectrofluorimetry.
- (h) What are ESR ?
- (i) Write in brief about gel electrophoresis.

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HQ—11—2022

FACULTY OF SCIENCE AND TECHNOLOGY

M. Pharm. (First Semester) EXAMINATION

MARCH/APRIL, 2023

ADVANCED PHARMACOLOGY-I

Paper MPL102T

(Saturday, 18-3-2023)

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

Time—Three Hours

Maximum Marks—75

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

(ii) Answer to the point only.

(iii) Figures to the right indicate full marks.

1. Answer the following :

10×2=20

(a) Define :

(i) Pharmacokinetics

(ii) Pharmacodynamics.

(b) Enlist the neurotransmitters involved in neurohumoral transmission of autonomic nervous system.

(c) Write the mode of action of coagulants.

(d) What is Psychosis?

(e) Write mode of action of Anti-platelet drugs.

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(f) Define the state :

(i) epilepsy

(ii) mania.

(g) What are non-narcotic analgesics ?

(h) What is the condition hyperlipidemia ?

(i) What are parasymphatholytics ? Give example.

(j) What is hypertension ?

2. Answer any *two* of the following :

2×10=20

(a) What is epilepsy and mania ? Classify anti-epileptic drugs and write pharmacology of any *one* drug used to treat epilepsy.

(b) What are autocooids ? Give physiological and pathological role of prostaglandins.

(c) Write notes on

(i) Narcotic analgesics

(ii) Non-narcotic analgesics.

3. Answer any *seven* of the following :

7×5=35

(a) What are parasympathomimetics ? Give pharmacology of pilocarpine.

(b) Write on physiological and pathological role of Histamine.

(c) What are Fibrinolytics ? Give pharmacology of any *one* drug having such activity.

(d) Write on pharmacology of Dapsone.

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HQ—21—2022

FACULTY OF SCIENCE AND TECHNOLOGY

M.Pharm. (First Semester) EXAMINATION

MARCH/APRIL, 2023

PHARMACOLOGICAL AND TOXICOLOGICAL SCREENING METHODS-I

Paper-MPL-103-T

(Tuesday, 21-03-2023)

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

Time— Three 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) Write the applications of transgenic animals.

(b) Write different euthansia and anesthesia procedures used for experimental animals.

(c) What are inbreeding animals ?

(d) What is CRCSEA ? Mention its purpose.

(e) List out various techniques to induce hepatotoxicity.

(f) List out techniques to induce gastric ulcer in rat.

(g) Mention the animal models for screening of Anti-inflammatory agents.

(h) Write some alternatives to animal experimentation.

(i) List out screening methods for diuretic and histamine antagonists.

(j) Define bioassay. Give example of non-response type of bioassay.

2. Answer any two of the following

2×10=20

(a) Explain the various screening methods of Immunosuppressants and immunostimulants.

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- (b) Write a detailed note on screening methods for antidiabetics.
- (c) Describe in detail principle application advantages and disadvantages of bioassay.

3. Solve any *seven* of the following :

7×5=35

- (a) Write short notes on pole climbing apparatus and Actophotometer.
- (b) Explain in-vivo screening models for analgesic activity.
- (c) Explain any *two* in-vitro screening methods for anticonvulsant activity.
- (d) Explain the role of Guinea pig ileum and Rat uterus in pharmacological screening.
- (e) Justify the use of cell lines in drug research.
- (f) Explain any *one* method for screening of bronchodilator agents.
- (g) Explain the importance of phrenic nerve and diaphragm of rat in screening.
- (h) Explain in-vivo methods of screening for nootropic activity.
- (i) Describe the screening procedure for Anti-inflammatory activity.

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FACULTY OF SCIENCE & TECHNOLOGY

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

MARCH/APRIL, 2023

Paper-MPL-104T

CELLULAR AND MOLECULAR PHARMACOLOGY

(Friday, 24-03-2023)

Time : 02.00 p.m. to 05.00 p.m.

Time—Three Hours

Maximum Marks—75

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

(ii) Figures to the right indicate full marks.

(iii) Answer to the point only

1. Answer the following questions :

10×2=20

(i) What is DNA electrophoresis ?

(ii) Write a note on Micro-array technique.

(iii) What is gene mutation ?

(iv) Define Autophagy.

(v) What is gene mapping and gene sequencing ?

(vi) Enlist types of Immunotherapeutics.

(vii) Define cryopreservation.

(viii) Give application of ELISA.

(ix) Give various types of gene transfers.

(x) What are the stages of cell cycle ?

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

- (i) Give types of cell culture media, general procedure and equipments used in cell culture media.
- (ii) Write in detail about Gene mapping and Clonning of disease gene.
- (iii) Write a note on intrinsic and extrinsic pathways of Apoptosis.

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

- (i) Write a note on G-protein coupled receptors.
- (ii) Write applications of Proteomics Science.
- (iii) Give principles and application of PCR.
- (iv) Write a note on Western blotting.
- (v) Explain in detail cell cycle.
- (vi) Write a note on Immunotherapeutic.
- (vii) Give principle and applications of cell viability assay.
- (viii) Define the following terms :
 - (a) Functionomics
 - (b) Nutrigenomics
 - (c) Metabolomics.
- (ix) Give principle and application of flow cytometry.