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Total No. of Pages : 02

Total No. of Questions : 06

M.Pharmacy (Pharmacology) (Sem.–1)

CELLULAR & MOLECULAR PHARMACOLOGY

Subject Code : MPL-104T

M.Code : 74678

Date of Examination : 15-12-2023

Time : 3 Hrs.

Max. Marks: 75

INSTRUCTIONS TO CANDIDATES :

1. **Attempt any FIVE questions out of SIX questions.**
2. **Each question carries FIFTEEN marks.**

1. a) Discuss cell culture media and various types of cell culture.

   b) Explain gene expression and its regulation.

   c) Explain various types of gene transfer techniques.

2. a) Write down the types of immunotherapeutic and explain the Humanization Antibody therapy.

   b) Explain role of oxidative stress as one of the mechanisms of neuronal death.

   c) Explain the importance of siRNAs and micro RNA in cell biology.

3. Explain role of one of the following intracellular signalling pathways:

   a) Mitogen-activated protein kinase (MAPK) or (JAK).

   b) Give comment on genetic polymorphism affects drug metabolism.

   c) Enlist various secondary messengers and describe in detail NO and IP3.

4. Describe following terminologies in detail :

   a) Apoptosis, Necrosis and Autophagy

   b) Intrinsic and Extrinsic pathways of apoptosis

   c) Explain molecular structure of ligand gated ion channel and G protein coupled receptors.

5. **Write a note on :**

   a) Proteonomics

   b) Biosimilars

   c) Clinical applications of gene therapy in CNS and CVS diseases.

6. Write principles and applications of following genomic tools :

   a) Reverse transcriptase PCR, Real Time PCR and RTq PCR.

   b) Describe in detail phases of cell cycle and its regulations.

   c) Enlist various types of ELISA. Explain any one in detail.

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Total No. of Pages : 01

Total No. of Questions : 06

M.Pharmacy (Pharmacology) (Sem.–1)

PHARMACOLOGICAL AND TOXICOLOGICAL SCREENING METHODS-I

Subject Code : MPL-103T

M.Code : 74677

Date of Examination : 13-12-2023

Time : 3 Hrs. Max. Marks: 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. a) What are transgenic animals? Write a note on importance of transgenic animals in research. (7.5)

   b) Define bioassay. Write principle and different methods of bioassay. (7.5)

2. a) What is inflammation? Discuss acute and sub acute preclinical studies of anti inflammatory drugs. (10)

   b) Write two animal models for screenings of anti anginal drugs. (5)

3. a) Define Hepatoprotective agent. Write screening methods for Hepatoprotective agents. (10)

   b) Give a note on immunoassay for insulin. (5)

4. a) Discuss different anesthesia techniques to be used in research. (7)

   b) Discuss in vivo preclinical screenings for immunosuppressant. (8)

5. a) Write about pacing induced arrhythmia. (5)

   b) Write pyloric ligation method for ulcers. (5)

   c) Give a note on alloxan induced diabetes. (5)

6. Discuss in detail about animal models to screen central analgesic activity of an entity, Indicating merits and demerits of each model. (15)

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M.Pharmacy (Pharmacology) (Sem.–1)

PHARMACOLOGICAL AND TOXICOLOGICAL SCREENING METHODS-I

Subject Code : MPL-103T

M.Code : 74677

Date of Examination : 13-12-2023

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Max. Marks: 75

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   b) Discuss in vivo preclinical screenings for immunosuppressant. (8)

5. a) Write about pacing induced arrhythmia. (5)

   b) Write pyloric ligation method for ulcers. (5)

   c) Give a note on alloxan induced diabetes. (5)

6. Discuss in detail about animal models to screen central analgesic activity of an entity, Indicating merits and demerits of each model. (15)

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Total No. of Questions : 06

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M. Pharmacy (Pharmacology) (Sem.–1)

ADVANCED PHARMACOLOGY-I

Subject Code : MPL-102T

M.Code : 74676

Date of Examination : 11-12-2023

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. a) Define arrhythmia. Classify anti-arrhythmic drugs according to their effect on action potential. Write pharmacology of flecainide. (10)

   b) Classify COX inhibitors. Write pharmacology of selective COX-2 inhibitor. (5)

2. a) Give first line drug choice in various types of epilepsy. Write mechanism of action, therapeutic uses and adverse drug reactions of Gabapentin. (7.5)

   b) Enumerate cardio selective sympathomimetic drugs. Discuss their mechanism of action, therapeutic uses and side effects. (7.5)

3. a) Explain biosynthesis and transmission of neurotransmitter in parasympathetic system. (7.5)

   b) Describe various techniques of local anesthesia. Write complications of spinal anesthesia. (7.5)

4. a) Enumerate FDA approved muscle relaxant to treat spasticity. Write pharmacology of dantrolene. (7.5)

   b) Define hypertension. Classify anti hypertensive drug. Discuss mechanism of action and adverse effect of ACE inhibitors. (7.5)

5. a) Enumerate serotonin receptors with their agonists and antagonists. Write a note on cyproheptadine. (10)

   b) Discuss concept of linear compartment model. (5)

6. a) Define neurotransmission and co-transmission. Write steps involved in neurotransmission. (5)

   b) Classify antihistaminic drugs used in allergic diseases. Write pharmacology of second generation antihistaminic drugs. (10)

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M.Pharmacy(Pharmacology) (Sem.–1)

MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

Subject Code : MPL-101T

M.Code : 74675

Date of Examination: 08-12-2023

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries EQUAL marks.

1. a) Define Beer Lambert law. Discuss about auxochrome and chromophore with examples.

   b) What are the factors affecting fluorescence?

   c) Give the the principle of flame emission spectroscopy.

2. Define spin-spin splitting. Give examples. Write an exhaustive note on chemical shift and factors affecting chemical shift.

3. Discuss the basic principle of chromatography. How gas chromatography is useful in separation of compounds? Discuss the detectors used in Gas chromatography with diagrams.

4. a) Define the term deformations in IR spectroscopy. Write a descriptive note on sample preparation of solids in IR spectroscopy.

   b) Discuss about electron spray ionization in mass spectrometry.

5. a) Discuss about isoelectric focusing giving its significance also.

   b) Give the instrumentation of Differentiation of differential scanning calorimetry.

   c) How potentiometry is helpful in analysis of compounds?

6. a) Describe rotating crystal technique in. X Ray diffraction.

   b) Write a note on affinity chromatography with its importance in analysis.

   c) Explain the basic principle of ion exchange chromatography discuss its applications in detail.

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