

Roll No.

Total No. of Pages : 01

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M.Pharmacy (Pharmacology) (Sem.-1)

CELLULAR & MOLECULAR PHARMACOLOGY

Subject Code : MPL-104T

M.Code : 74678

Date of Examination : 23-12-2024

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 restriction endonucleases? Explain different steps involved in recombinant DNA technology. (10)
b) Explain signal transduction of G protein coupled receptors. (5)
2. a) Define receptor. Classify cell surface receptors in detail with suitable example. (10)
b) Write a note on monoclonal antibody. (5)
3. a) Explain post translation regulation of gene. (5)
b) What are the different phases in cell cycle? (10)
4. a) Discuss how polymorphism affecting drug metabolism. (10)
b) Define cell culture. Discuss various types of cell culture. (5)
5. a) What is PCR? What are its characteristic features? Discuss steps involved in PCR. (10)
b) What are the applications of gene sequencing? (5)
6. a) Define autophagy. What is the physiological and pathological significance of autophagy? (10)
b) Write characteristics feature of necrosis. (5)

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DSC-2024

Total No. of Pages : 02

M.Pharmacy(Pharmacology) (Sem.-1)
MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

Subject Code : MPL-101T
M.Code : 74675

Date of Examination : 20-12-2024

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 is the principle of IR spectroscopy? Describe the working of FT-IR spectrophotometer explaining the function of each component. (8)
2. a) A UV-VIS Spectrophotometer and a spectrofluorimeter have the same radiation sources, monochromators and detectors, but both the equipment are different. Describe the difference between two equipment with the help of neatly outlined diagrams. Give specific applications of spectrofluorimetry. (7)
3. a) Define the terms Precessional frequency and Coupling constant. Recall the mechanism of spin-spin splitting giving suitable examples. Describe various factors affecting coupling constant. (10)
4. b) What is deuterium exchange experiment? Give its importance in structural elucidation with example. (5)
5. a) Define the terms Nitrogen rule and Index of Hydrogen Deficiency (IHD). Calculate IHD of dopamine and histamine. (8)
6. b) What are isotope peaks and metastable ions? Give importance of isotope peaks citing specific examples in structural elucidation. (7)
7. a) Describe K₂ and Plate theories of chromatographic separation. Recall the differences between HPLC and UHPLC in terms of stationary phase, pumps and performance. (10)
8. b) What is the mechanism of separation by affinity chromatography? Give its specific applications. (5)

5. a) Discuss the principle, instrumentation and applications of moving boundary isoelectric focusing. (10)
b) Write a note on different types of crystals. (5)
6. a) Give an account of experimental parameters affecting the performance of DSC. (10)
b) What is the principle of potentiometry? Recall different methods to locate equivalence point in a titration using this technique. (5)

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M.Pharmacy (Pharmacology) (Sem.-1)
**PHARMACOLOGICAL
& TOXICOLOGICAL SCREENING METHODS-I**

Subject Code : MPL-103T

M.Code : 74677

Date of Examination : 18-12-2024

Time : 3 Hrs.

Max. Marks: 75

INSTRUCTIONS TO CANDIDATES :

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

1. What do you mean by bioassay? Enumerate various types of bioassay. Write about the principles and limitations of the various bioassays. Explain about the immunoassay of digoxin.
2. Write down a brief note on the Good laboratory practices. Describe in detail about regulations, for laboratory animal care as per CPCSEA Guidelines.
3. List the methods available to induce diabetes and describe three models in the screening of anti-diabetic agents. What is the best animal model for the screening of the anti-diabetic agents.
4. Write a short note on the following:
 - a. Pleurisy test
 - b. MPTP induced Parkinson' disease in monkeys.
 - c. Extrapolation of in vitro data to preclinical studies.
5. Explain animal models used for the testing of:
 - a. anti-asthmatic agents.
 - b. anti dyslipidemic agents.
6. Enumerate various animal models used for the testing of anxiolytic and antihypertensive agents. Explain two animal models from both.

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M. Pharmacy (Pharmacology) (Sem.-1)

ADVANCED PHARMACOLOGY-I

Subject Code : MPL-102T

M.Code : 74676

Date of Examination: 16-12-2024

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) Classify lipid lowering agents. Write note on HMG CoA reductase inhibitors. (7.5)
b) Describe neurohumoral transmission through sympathetic nervous system. (7.5)
2. a) Write short note on fibrinolytics. (5)
b) Classify sympathomimetic drugs. Write pharmacology of selective β -receptor agonists. (10)
3. a) Explain organo-phosphorous poisoning and its treatment. (7.5)
b) Classify diuretics with examples. Write pharmacology of carbonic anhydrase inhibitors. (7.5)
4. a) How hypnotics different from sedatives? Discuss pharmacology of Zolpidem. (5)
b) Justify the use of calcium channel blockers as antihypertensive, antianginal and anti-arrhythmic agent. (10)
5. a) Write factors affecting distribution of drugs. (5)
b) Explain dose response relationship with suitable illustrations. (5)
c) Enumerate drugs used in thrombosis. Give mechanism of action and side effects of dabigatran. (5)
6. a) Classify drugs used in glaucoma. Write pharmacology of prostaglandin analogue. (5)
b) Discuss mechanisms associated with depression. Explain the pharmacology of SSRIs. (7)
c) Write significance of protein binding in brief. (3)

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