

Exam Date & Time: 27-Nov-2019 (02:00 PM - 05:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal Academy of Higher Education, Manipal MPharm Theory End-Semester Examinations.

Advanced Pharmacology I [PHA-MPL102T - S2]

Marks: 75

Duration: 180 mins.

SECTION - A

Answer all the questions.

Answer the following (10 marks x 5 = 50 marks)

- 1) Giving examples classify antihypertensive drugs acting by decreasing peripheral resistance. Explain the molecular mechanism of action of selective-veno dilators. (10)
- 2) Explain the therapeutic applications of serotonergic and histaminergic receptor blockers, with examples. Describe the synthesis of mediators in RAAS pathway and indicate the drugs affecting the system. Enumerate their therapeutic applications. (10)
- 3) Illustrate the synthesis of membrane derived lipid autacoids and their role in thrombus formation. Explain the mechanism of action of different classes of antiplatelet drugs. (10)
- 4) Describe cholinergic neurotransmission. List the different drugs that affect the system. (10)
- 5) Classify anti-epileptic drug based on the ion channels that are blocked. Explain the mechanism of action of any one drug used for Petitmal seizure (10)

SECTION - B

Answer all the questions.

Answer the following (5 marks x 5 = 25 marks)

- 6) Explain the characteristics of a drug given by intravenous route, that follows one compartment zero order kinetics. (5)
- 7) Depict adrenergic neurotransmission and indicate the drugs affecting the processes. (5)
- 8) Explain the role of vitamin K in blood coagulation. Describe how anticoagulants affect the functioning of vitamin K. (5)
- 9) Explain the mechanism of action of drugs acting through Nuclear receptor (5)
- 10) Write a note on GABA receptor-ion channel complex. List the different drugs that affect the receptor functions (5)

Time: 29-Nov-2019 (02:00 PM - 05:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal Academy of Higher Education, Manipal MPharm Theory End-Semester Examinations.

Pharmacological and Toxicological Screening Methods I [PHA-MPL103T]

Duration: 180 mins.

Marks: 75

SECTION - A

Answer all the questions.

Answer the following (10 marks x 5 = 50 marks)

- 1) Explain the requirements of physical facilities and environment of laboratory animal facility as per regulatory guidelines. (10)
- 2) 2A. With examples, mention the classes of methods for screening analgesics based upon type of noxious stimuli. (3 marks)
2B. A test compound was found to be μ -receptor agonist at 0.01 picomolar concentration but also selectively inhibited COX-1 enzyme at 100 μ M and above, when tested in vitro. Justify, for in vivo screening of this molecule, what screening strategy should be adopted? (3 marks) (10)
2C. Among the screening methods adopted, explain any two methods. (4 marks)
- 3) 3A. Based upon the type of immunomodulatory mechanism, list the types of screening methods. (3 marks). (10)
3B. Explain any three methods to clearly distinguish the type of immunomodulation. (7 marks)
- 4) 4A. Classify animal models to screen anti-depressant drugs. (2.5 Marks)
4B. Plan an animal screening test to evaluate a test compound that can inhibit stress induced depressive behavior. (5 Marks) (10)
4C. Distinguish between despair and anhedonia. (2.5 Marks)
- 5) 5A. Classify animal models to screen type 2 diabetes mellitus. (3 Marks)
5B. Plan an animal screening test to evaluate a test compound against type 2 diabetes. (5 marks) (10)
5C. Mention the limitation of genetic models to induce diabetes. (2 marks)

SECTION - B

Answer all the questions.

Answer the following (5 marks x 5 = 25 marks)

- 6) How to plan and optimize the immunoassay method? (5)
- 7) Design a basic protocol outline for sandwich ELISA. (5)
- 8) 8A. Justify the significance of enteropooling test? (3 marks) (5)

8B. Calculate the oral dose (mg/kg) of Donepezil for rats and mice, if the human dose is 10 mg per day. (2 marks)

- 9) 9A. With examples, emphasize upon the indications of bioassay methods. (4 marks) (5)
9B. Write any two limitations of in-vitro methods. (1 mark)
- 10) 10A. Why spiral cutting is done to record the vasorelaxant property of test compounds in isolated rat thoracic aorta experiment? (3 marks) (5)
10B. What is catatonia? How it can be assessed in rodents? (2 marks)

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Date & Time: 02-Dec-2019 (02:00 PM - 05:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal Academy of Higher Education, Manipal MPharm Theory End-Semester Examinations.
Cellular and Molecular Pharmacology [PHA-MPL104T - S3]

Marks: 75

Duration: 180 mins.

SECTION - A

Answer all the questions.

Answer the following (10 marks x 5 = 50 marks)

- 1) Explain the principle of any five cell viability assays. Outline a brief procedure. Describe its applications. (10)
- 2) Describe the various equipment, media and cell culture techniques required for growing cells. (10)
- 3) Explain the apoptotic process with a diagram. Differentiate this process from necrosis. (10)
- 4) Describe the various types of gene transfer techniques. Explain the clinical applications and highlight the recent advances in gene therapy. (10)
- 5) Classify antibodies. Explain the nomenclature, structure, production and uses of antibodies. (10)

SECTION - B

Answer all the questions.

Answer the following (5 marks x 5 = 25 marks)

- 6) Outline the principle underlying glucose uptake assays. Mention its uses. (5)
- 7) Discuss the signal transduction mechanism operating through nuclear receptors. (5)
- 8) Write a note on genetic variation in GPCRs and its effect. (5)
- 9) Write a note on drugs targeting costimulatory signal in cancer therapy. (5)
- 10) Explain the purpose of genomics. Mention its applications (5)

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