

Exam Date & Time: 11-Mar-2022 (10:00 AM - 01:00 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]

Marks: 75

Duration: 180 mins.

#### SECTION - A

**Answer all the questions.**

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

- 1) List the methods to produce transgenic animals and explain two routinely used methods. Give your insight for the maintenance of transgenic animals. Differentiate between ob/ob and db/db animals and their applications. (5+2+3 marks) (10)
- 2) Describe the principle, procedure and evaluation criteria of screening methods which uses acetic acid and formalin to induce pain in mice. (10)
- 3) Classify the various types of immunoassays. Discuss the non-competitive antigen measuring type of ELISA. (3+7 marks) (10)
- 4) Classify screening methods for anti-epileptic drugs. Discuss the principle and brief procedure of any two in vivo screening methods of chemical-induced convulsions. (3+7) (10)
- 5) List the methods to induce experimental diabetes in animals. You are planning to inject streptozotocin (45 mg/kg, i.p) in 50 rats to induced type II diabetes. Explain the pre and post precautionary measures during these injections. (4+6) (10)

#### SECTION - B

**Answer all the questions.**

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

- 6) Rationalized and give applications of neutrophil adhesion and carbon clearance test. (5)

- 7) Discuss the principle and evaluation criteria of a rat model of adjuvant-induced arthritis. (5)
- 8) Explain an in vivo method to assess the test compound which was found as competitive antagonist to peripheral D2 receptors. (3 marks) (3)
- A)
- B) Calculate the oral dose (mg) of a test compound for a 60 kg man, if it was effective in mice at a dose of 60 mg/kg, orally. (2 marks) (2)
- 9) Summarize the main functions of IAEC. (3 marks) (3)
- A)
- B) List the various aspects for the optimization of an immunoassay. (2 mark) (2)
- 10) How pentobarbitone-induced sleeping time is useful to assess hepatotoxicity and hepatoprotective effects? (3 marks) (3)
- A)
- B) Why washing and lysis of cells are essential before dissolving the formazan dye in DMSO while performing MTT assay to assess cell viability? (2 marks) (2)

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