

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: M.PHARMACY
BRANCH: PHARMACOLOGY**

**SEMESTER: I
SESSION: MO2025**

SUBJECT: MPL103T PHARMACOLOGICAL AND TOXICOLOGICAL SCREENING I

TIME: 3.00 Hours

FULL MARK: 75

INSTRUCTIONS:

1. The missing data, if any, may be assumed suitably.
 2. Before attempting the question paper, be sure that you have got the correct question paper.
 3. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
 5. Answer any five questions.
-
- 1a. Name the animal models used to study hepatoprotective activity. Design a suitable experiment to screen for hepatoprotective activity of an unknown substance [7]
 - 1b. Explain ulcer index with the help of a mathematical representation. Discuss a method used to screen a compound for stress-induced ulceration. [8]

 - 2a. Define emetogen and cite example. Which species are usually used for the screening of antiemetic activity and why? Elaborate on a preclinical method used to screen for motion sickness. [7]
 - 2b. What are clonic and tonic convulsions? Name some convulsant and anticonvulsant agents. Enlist the methods used to screen for anticonvulsant activity in animals and elaborate on one such screening method. [8]

 - 3a. Define bioassay. Enumerate its application in Pharmacological screening. Select the criteria involved in a good biological assay procedure. [7]
 - 3b. Design one suitable experiment each to evaluate conduction and surface anaesthesia in mammals. [8]

 - 4a. Define immunoassay. Discuss different types of immunoassays. Which type of immunoassay is advantageous and why? Explain the methods of antibody immobilization to the support materials. [7]
 - 4b. Differentiate between the MOA of Alloxan and Streptozotocin in the induction of diabetes. Elaborate on the diabetes induction using a surgical method. [8]

 - 5a. Define transgenesis. Discuss different applications of transgenic animals for the benefit of humankind. [7]
 - 5b. Explain how the guidelines by the CCSEA help in regulating animal husbandry. [8]

 - 6a. Discuss the criteria for selecting an ideal method to euthanize experimental animals. Explain the chemicals used in euthanizing experimental animals, with their mechanism to cause euthanasia. [7]
 - 6b. Describe any non-invasive method of measuring blood pressure in rodents. Discuss any two methods with the mechanisms of developing hypertensive animals in the laboratory for screening of antihypertensive agents. [8]

 - 7a. Illustrate any two screening models used to evaluate the spatial learning of the experimental animals. [7]
 - 7b. Discuss the methods of transportation of laboratory animals in a manner that does not jeopardise their well-being or health status. [8]

:::21/11/2025:::M