

**M.Sc. II Semester Degree Examination, Sept./Oct. - 2024****ZOOLOGY****Non-Clinical Safety Evaluation of Drugs****(NEP)**

Time : 1 Hour

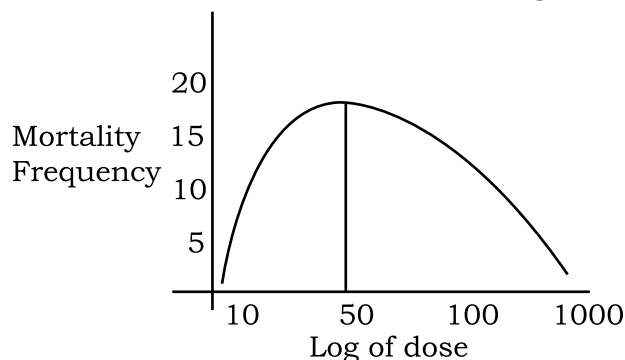
Maximum Marks : 30

Note : Answer the following MCQ in an OMR sheet provided. (Each question carries **one** mark)

1. The most rapid exposure to a chemical would occur through which of the following routes _____.
(A) Oral (B) Subcutaneous (C) Inhalation (D) Intramuscular
2. The LD50 is best described as which of the following :
(A) The dose at which 50% of all test animals die
(B) The dose at which 50% of the animals demonstrate a response to the chemical
(C) The dose at which all of the test animals die
(D) The dose at which at least one of the test animals dies
3. MTD stands for _____.
(A) minimum tolerated dose (B) maximum total dose
(C) maximum tolerated dose (D) maximum threshold dose
4. The most common species used in animal research is :
(A) Cats (B) Dogs (C) Rabbits (D) Mice
5. CPCSEA stands for :
(A) Committee for the Purpose of Control and Supervision of Experiments on Animals
(B) Council for the Purpose of Control and Supervision of Experiments on Animals
(C) Committee for the Purpose of Control and Supervision on Animals
(D) Centre for the Purpose of Control and Supervision of Experiments on Animals
6. For performing animal studies permission has to be taken from :
(A) Institutional Animal Ethics Committee
(B) Central Government
(C) State Government
(D) None



7. Average life span of albino rat is :
(A) 1-2 years (B) 4-5 years (C) 2-3 years (D) 6-7 years
8. *Cavia porcellus* is a scientific name of _____.
(A) Rat (B) Rabbit (C) Hamster (D) Guinea pig
9. Guideline used for prenatal developmental toxicity study :
(A) OECD 414 (B) OECD 421 (C) OECD 422 (D) OECD 407
10. The oldest quality control laboratory of the Drug Control Authorities in India is :
(A) Central Drugs Testing Laboratory, Kolkata
(B) Central Drugs Testing Laboratory (CDTL) Chennai, Tamil Nadu
(C) Central Drugs Testing Laboratory (CDTL) Hyderabad, AP
(D) Central Drugs Testing Laboratory (CDTL), Mumbai
11. Following is the member of IAEC :
(A) Biological Scientist (B) Socially Aware Member
(C) Veteranarian (D) All of the above
12. The very well reported birth defect of thalidomide is _____.
(A) Cleft palate (B) Congenital heart disease
(C) Phocomelia (D) Club foot
13. Lethal dose concentration according to the curve is _____.



- (A) 10 (B) 50 (C) 100 (D) 1000
14. ppm (parts per million) is equivalent to _____.
(A) g/kg (B) $\mu\text{g}/\text{kg}$ (C) mg/kg (D) ml/L
15. What are the steps involved in evaluation of toxicity ?
(A) Chemical analysis
(B) Pathway analysis
(C) Hazard identification and dose-response evaluation
(D) Evaluation of long term impact



16. 'Micronucleus' formation is an example of _____.
(A) teratogenicity (B) carcinogenicity
(C) genotoxicity (D) cytotoxicity
17. Dose is defined as the _____.
(A) Amount of substance which is released into the environment.
(B) Amount of substance which reaches the target site in the body.
(C) Amount of substance which is converted into active metabolite to exert toxic effect.
(D) Amount of substance which enters into the body.
18. The 4th "R" included in CPCSEA in 2004 was :
(A) Reuse and Rehabilitation (B) Replacement
(C) Reduction (D) Refinement
19. In a reproductive toxicity study, what is the "fertility index" ?
(A) the percentage of live fetuses per litte
(B) the percentage of attempted matings that result in pregnancies
(C) the ratio of fetuses at 14 days gestation/total implantations
(D) the ratio of early fetal deaths/total implantations
20. Choose the correct sentence :
(A) Mice and rats have long served as the preferred species for biomedical research animal models due to their anatomical, physiological and genetic similarity to humans.
(B) The rat was the first mammalian species specifically domesticated to be used in the laboratory.
(C) The rats have been used to answer a wide range of basic science questions ranging from physiology, immunology, pharmacology, toxicology, nutrition, behaviour and learning.
(D) All of the above
21. The phrase that best defines "toxicodynamics" is the :
(A) linkage between exposure and dose
(B) linkage between dose and response
(C) dynamic nature of toxic effects among various species
(D) dose range between desired biological effects and adverse health effects
22. A subchronic animal study required by the FDA will usually include _____.
(A) Two species (usually one rodent and one nonrodents)
(B) Both genders
(C) At least three doses (low, intermediate and high)
(D) All of the above



23. Genotoxicity involves _____.
- (A) alteration in DNA sequence
 - (B) toxic damages to the DNA, such as DNA strand breaks
 - (C) chromosomal abnormalities
 - (D) All of the above
24. The ability of a chemical to cause acute skin and eye irritation is usually evaluated in a _____.
- (A) Rabbit
 - (B) Rat
 - (C) Mouse
 - (D) Dog
25. The period of organogenesis in rats is _____.
- (A) Day 3-10
 - (B) Day 7-17
 - (C) Day 12-25
 - (D) Day 17-56
26. After applying a statistical test, an investigator gets the P-value as 0.01. It means that ?
- (A) The probability of finding a significant difference is 1%.
 - (B) The probability of declaring a significant difference, when there is truly no difference, is 1%.
 - (C) The difference is not significant 1% times and significant 99% times.
 - (D) The power of the test used is 99%.
27. Standard deviation of 10, 16, 10, 16, 10, 10, 16, 16 is :
- (A) 4
 - (B) 6
 - (C) 3
 - (D) 0
28. Standard deviation is the square of :
- (A) Mode
 - (B) Variance
 - (C) Standard error
 - (D) Regression
29. Standard error is calculated by :
- (A) Dividing standard deviation by the square root of the sample size.
 - (B) Dividing number of nominated outcome by number of possible outcome.
 - (C) Adding all the numbers and then dividing by the numbers of observations.
 - (D) Arranging the numbers in numerical order, then taking the middle one.
30. Analysis of variance is a statistical method of comparing the _____ of several populations.
- (A) standard deviations
 - (B) variances
 - (C) means
 - (D) none of the above

