

Ph.D. Course Work (Aug, 2022)
PHTX103-Elective Paper : TOXICOLOGY
METHODS OF TOXICOLOGY

Time: Three Hours

Maximum Marks: 100

(Write your Roll No. at the top immediately on receipt of this question paper)

Answer ALL questions. All parts of a question must be answered in continuation. Start answering each question on a new page. Cite examples and draw labeled diagrams.

Q1. Short Answer Type; attempt any 10 (not more than half page) 10×2=20

- i) What do you understand by in vivo models in toxicological studies?
- ii) What is cell culture?
- iii) Why we select cancer cell lines for toxicological studies?
- iv) What do you understand by cytotoxicity?
- v) What is Intake, Uptake in Exposure assessment?
- vi) Mutant bacteria are used for the Ames test. What amino acid are they not able to make on their own?
- vii) Define Carcinogenicity.
- viii) Write two advantage of Sister Chromatid Exchange assay.
- ix) What is Acute *systemic toxicity testing*?
- x) What do you understand by the below statement?
“For test articles that are pharmacologically inactive in the traditional animal models, the guinea pig may be a viable option. This choice should not be made lightly, as guinea pigs have many disadvantages compared to the traditional species, including limited historical control data, variability in pregnancy rates, small and variable litter size, long gestation, relative maturity at birth, and difficulty in dosing and breeding.”
- xi) What is Genotoxicity Testing?”
- xii) Which assay is used to assess chromosomal damage as a consequence of mutagen exposure?
- xiii) What are the most common [signs and symptoms](#) of acute poisoning.
- xiv) What is the role of Laminar flow hood in cell culture?
- xv) What are workplace exposures?

Q2. Short note type; Attempt any 04 (not more than two pages) 4×5=20

1. Describe Basics of Cell Culture.
2. Discuss Rat and mouse models in toxicological studies.

3. Describe Exposure Assessment in short.
4. Write a short note on Cancer hazard and risk assessment.
5. Describe Sister Chromatid Exchange.
6. Write short note on Acute Toxicity testing.

Q.3. Long note type (no limit of pages)

3×20=60

1. What are different routes of drugs/toxins administration. Describe 4 routes in details

OR

Discuss Oral toxicity and dermal toxicity in details.

2. Discuss different cell lines used in toxicological studies in details?

OR

Describe in details the Systemic approaches to Carcinogenic activity testing.

3. Describe principle, protocol and application of Ames test.

OR

What do you understand by Micronucleus assay. Describe it in details
