2211E794   Candidate's Seat No :_____

M.Sc Sem-3 Examination
503
Toxicology

Time : 2-30 Hours]   **November-2024**   **[Max. Marks : 70**

Instructions: All questions in Sections I & II carry equal marks

Illustrate your answers with neat diagrams wherever necessary.

Question 1   Write the following

(i) What are the factors that modify drug action? Elaborate with examples.   (7 Marks)

(ii) What are the different pharmacological classifications of drugs? Explain (7 Marks) drugs acting on the nervous system with different classes and examples. Explain any one drug with a mechanism of action.

OR

(i) Write the different pharmacological classifications of drugs. Explain (7 Marks) cardiovascular drugs with different classes and examples. Explain any one drug with a mechanism of action.

(ii) What are adverse drug reactions? Explain with examples of each in detail.   (7 Marks)

Question 2   Write the following

(i) Explain Schedule Y and all appendices involved. Explain Appendix III in   (7 Marks) detail.

(ii) Explain OECD guidelines in detail with different sections. List any 10 (7 Marks) guidelines with the title and numbers involved.

OR

(i) What are ICH guidelines and objectives? Explain guidelines involved in S1 (7 Marks) to S11 (explain any 5).

(ii) Describe the design and objectives of preclinical toxicity studies. What key (7 Marks) components need to be addressed before moving a drug candidate into clinical development?

Question 3   Write the following

(i) Write a detailed note on the fabrication of the nanoparticles.   (7 Marks)

(ii) Describe the various cellular mechanisms for nanomaterial toxicity.   (7 Marks)

OR

(i) Explain the role of nanoparticles in drug delivery systems. How can the same (7 Marks) properties that make nanoparticles useful for medical applications also pose toxicity risks?

(ii) Write a detailed note on the nanomaterial's toxicity risk assessment.   (7 Marks)

(P. T. O)

Question 4   **Write the following**

(i)   Explain the toxicology of mycotoxins. What are mycotoxins, and how do (7 Marks) they contaminate food sources?

(ii)   What are the endogenous toxins of plant origin? Discuss in detail.   (7 Marks)

OR

(i)   Write a note on the AB type of bacterial toxin with two examples.   (7 Marks)

(ii)   What is Shellfish poisoning? Discuss the various types of toxicants (7 Marks) associated with it.

Question 5   **Attempt any seven out of twelve**   (14 Marks)

(i)   Why are toxicological studies important in the drug manufacturing process?

(ii)   What role does age play in modifying the action of drugs in the body?

(iii)   What is the significance of personalized medicine concerning pharmacogenetics?

(iv)   What is Schedule Y, and what does it regulate?

(v)   Why are preclinical toxicity studies important in drug development?

(vi)   Why are ICH guidelines critical for global drug development?

(vii)   Describe the role of reducing agents.

(viii) Name any two surfactants used in nanomaterial synthesis.

(ix)   Write two top-down methods of nanomaterial synthesis.

(x)   Give two examples of a foodborne toxicant and its source.

(xi)   What is a bacterial toxin? Name two examples.

(xii)   Why is the analysis of toxicants in food important for public health?