

**Birla Institute of Technology and Science, Pilani,
Pilani-Campus (Rajasthan)**

Mid- Test: Sem- 1: 2022-2023

Course No: PHA G 624
Course Title: Principle of toxicology
Max. Marks: 30
Date: 03/11/2022

**Closed Book
Duration: 90 Min.**

Q-1: Explain the followings with the suitable example : 6.0 M

- i) Lipinski's rule of five
- iii) anaphylaxis with penicillin- management
- iv) Aneuploidy and Polyploidy
- iv) Nerve gases cause cardiac and respiratory toxicity, how?

Q-3: For a new developed drugable candidate, cell viability assay be performed at early stage. Preclinical toxicodynamics testing is a also vital part of drug development, generally using rodent and non rodent for studies.

- a) What are the Specific toxicity studies needs to be conducted for a NCE? 3.0 M
- b) Suggest, how to calculate the Safe Human Dose based on preclinical studies? 1.5 M
- c) What are the principle and how do you identify the viable and dead cell based on the MTT & Neutral Red assay? 3.0 M
- d) Enlist the In Vitro and In Vivo genotoxicity assay for testing a NCE? 2.0 M

Q-4: Which OECD guideline to be followed to conduct repeated Dose 28-day and 90days Oral Toxicity in rodents? 2.0 M

Q-5: What do you mean by bacterial reverse gene mutations test? How does it conduct? 2.0 M

Q: 6 In an emergency, a young adult was admitted, the nurse observed the symptoms (pinpoint pupils, unconsciousness; hypothermia, hypotension and difficulties with breathing) but as with the symptoms in cholinergic and opioidergic toxidrome are similar including pinpoint pupils. 4.0 M

- a) What will be likely and how the toxicity be further confirmed based on toxidrome for this patient?
- b) Discuss in brief, suitable general toxicological management approaches for the suspected drug/drug class poisoning.

Q-7: If your research group have developed-NCE for CVD but preliminary result suggest it can inhibit the hERG channel. Which ICH-guidelines you need to follow, what are the likely toxicities, how it could be confirmed ? 1.5 M

Q-8: Many smart criminals uses -arsenic for poisoning -due to its easy availability and others specific characteristics which can mislead even the diagnosis.

- a) For which infection, the symptoms can be mistaken and how could it be diagnosis correctly and which antidote be prefer to manage arsenic poisoning? 3.0 M

Q-9: Comments on the following: 2.0 M

- i) The **Elixir Sulfanilamide** disaster of 1937 was one of the most consequential mass poisonings of the 20th century, why?
- ii) Perforated nasal septum is commonly found in cocaine overdose toxicity?
