



W1-2-60-1-6

**JOMO KENYATTA UNIVERSITY
OF
AGRICULTURE AND TECHNOLOGY
UNIVERSITY EXAMINATIONS 2022/2023**

**FIRST YEAR FIRST SEMESTER EXAMINATIONS FOR DEGREE OF
MASTER OF SCIENCE IN MEDICINAL CHEMISTRY**

TPS 3109: PHARMACOLOGY AND TOXICOLOGY

DATE: FEBRUARY 2023

TIME: 3 HOURS

INSTRUCTIONS: ANSWER ANY FOUR QUESTION. EACH IS 25 MARKS

1. Discuss the application of knowledge of drug targets to the medicinal chemistry progression of drug discovery projects. (25 Marks)
2. You have been newly recruited by a research and development organization keen on exploring use of computer-aided drug discovery. Describe the various projects and output that you would propose to offer to the management team. (25 Marks)
3. Describe the host of toxicity studies required prior to launching of a clinical Development. (25 Marks)
4. Plasma protein binding, volume of distribution and clearance are among crucial parameters which influence the pharmacology of a drug. Describe the various impacts of these parameters and the medicinal chemistry approaches in modifying them. (25 Marks)
5. As the lead researcher for a new drug discovery program, you are called upon to mediate a stand-off in a team who are torn between applying either phenotypic whole cell screening or target-based drug discovery. Discuss the factors you will consider in guiding the team on the direction that would be appropriate for them to take. (25 Marks)
6. Describe the concept of the 3R in animal ethics as applies to use of animals for research and experimentation. (25 Marks)