


Name:	
Enrolment No:	

UPES
End Semester Examination, December 2023

Course: Animal Studies and Toxicity Assessment **Semester:** III
Program: B.Sc. Clinical Research **Duration:** 3 Hours
Course Code: HSCR2003 **Max. Marks:** 100

Instructions: Attempt all questions

S. No.	Section A Short answer questions/ MCQ/T&F (20Qx1.5M= 30 Marks)	Marks	COs
Q 1	In the secondary culture, cells are obtained from _____ a. Primary culture b. The organism c. Organ culture d. Phenotypic culture	1.5	CO1
Q 2	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	1.5	CO1
Q 3	Regulatory toxicology aims at guarding the public from dangerous chemical exposures, and depends primarily on which form of study: a. Observational human studies. b. Controlled laboratory animal studies. c. Controlled human studies. d. Environmental studies.	1.5	CO1
Q 4	Extrapolation is best described as which of the following: a. using known information to reach a conclusion. b. using known information to infer something about the unknown.	1.5	CO1

	<ul style="list-style-type: none"> c. using speculative information to infer something about the known. d. a "best guess" approach. 		
Q 5	<p>Doses of substances used in animal toxicity studies are usually many times greater than those experienced by people because:</p> <ul style="list-style-type: none"> a. Animals are generally much less sensitive than people b. Such tests can detect only very large risks because of the fact that only small numbers of animals can be used c. It is difficult in such studies to determine whether the observed toxic effects were caused by the substance d. It is the only way to ensure results are applicable to people 	1.5	CO2
Q 6	<p>Risk assessment is applied to data on toxicity and human exposure to:</p> <ul style="list-style-type: none"> a. Estimate the likelihood, or probability, of a toxic effect on exposed humans. b. To support risk management decisions for food substances c. To derive Allowable Daily Intakes d. All of the above 	1.5	CO2
Q 7	<p>Trypsin is used for dissociating the tissue into single cells.</p> <ul style="list-style-type: none"> a. True b. False 	1.5	CO2
Q 8	<p>Which information can be obtained from an acute toxicity study?</p> <ul style="list-style-type: none"> a. Median toxic dose (TD50) b. Median lethal dose (LD50) c. No Observed Adverse Effect Level (NOEL) d. All of the above 	1.5	CO2
Q 9	<p>A particular dose of substance X is minimal toxic to animal. Substance Y is also minimal toxic to the animals at the same dose, but when both the substances are administered together they show the toxicity several orders of magnitude higher than compared with individual administrations. This is an example of:</p> <ul style="list-style-type: none"> a. Potentiation 	1.5	CO2

	<ul style="list-style-type: none"> b. Additivity c. Synergism d. Agonism 		
Q 10	<p>Which is true about the LD₅₀?</p> <ul style="list-style-type: none"> a. Dose of a substance which kills 50% of animals exposed. b. Dose of a substance to which 50% of animals do not show any response. c. 50% of the dose of a substance which can kill an animal. d. Dose of a substance which can kill 50 animals 	1.5	CO2
Q 11	Define bioavailability and bioequivalence studies.	1.5	CO1
Q 12	<p>Which of the following case(s) can be categorized as toxicity?</p> <ul style="list-style-type: none"> a. Development of chronic lung inflammation in smokers. b. Chronic rhinitis associated with influenza. c. Gout, which is inflammation of joints due to accumulation of uric acid crystals. d. Post-surgical pus formation in a wound on forearm. 	1.5	CO3
Q 13	<p>Bioactivation encompasses the following.</p> <ul style="list-style-type: none"> a. A less harmful substance is converted into a more harmful one. b. It is a process which activates the metabolizing enzymes in the liver. c. Bioactivation is a part of biotransformation process. d. A & C 	1.5	CO3
Q 14	<p>Chemicals have specific targets in the body.</p> <ul style="list-style-type: none"> a. True b. Few does have targets, others are nonspecific. c. False d. Depends on the route of exposure. 	1.5	CO3
Q 15	<p>Which one of the following is true regarding Dose-response relationship?</p> <ul style="list-style-type: none"> a. Response is directly proportional to the dose of a substance. 	1.5	CO4

	<ul style="list-style-type: none"> b. Dose exhibits ‘all or none’ response. c. The dose which elicit a toxic response. d. The dose which does not induce any response. 		
Q 16	Define Toxins with example.	1.5	CO4
Q 17	<p>Which of the following is not a natural route of exposure to chemicals?</p> <ul style="list-style-type: none"> a. Inhalation b. Oral/Gastrointestinal tract c. Topical/Dermal d. Intraperitoneal 	1.5	CO4
Q 18	Define half-life of the drug.	1.5	CO4
Q 19	<p>Where in the body do toxicants/chemicals get stored?</p> <ul style="list-style-type: none"> a. Plasma proteins b. Body fat and Bones c. Liver and kidneys d. All of the above 	1.5	CO5
Q 20	<p>Which one of the following is true regarding Dose-response relationship?</p> <ul style="list-style-type: none"> a. Response is directly proportional to the dose of a substance. b. Dose exhibits ‘all or none’ response. c. The dose which elicits a toxic response. d. The dose which does not induce any response. 	1.5	CO5
<p>Section B (4Qx5M=20 Marks)</p>			
Q 1	What is the biological significance of vitamins	5	CO3
Q 2	Write a note on bioassay of Histamine.	5	CO1
Q 3	Discuss the role of institute ethics committee in animal studies.	5	CO2
Q 4	Write a note on two-generation reproduction toxicity studies	5	CO3
<p>Section C (2Qx15M=30 Marks)</p>			

Q 1	You have received a cell line in a cryovial from the cell line supplier. Your supervisor asked you to proceed with reviving, subculturing, and freezing the cells. a. Name the basic materials and equipment used in the process. b. What will be the steps involved in the process.	5+10	CO1, CO5
Q 2	Define bioassay. Discuss the principle and types of bioassay in detail.	(2+3+10)	CO4
Section D (2Qx10M=20 Marks)			
Q 1	Describe microbiological assay of antibiotics	10	CO1, CO2
Q 2	What are the sources of pyrogens. Discuss the chemical physical and biological properties of endotoxins. Or Discuss the techniques of endotoxin removal in biological preparations	10	CO1