


Name:	
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2023

Course: Animal Studies and Toxicity Assessment	Semester: IV
Program: B.Sc. M.Sc. Integrated 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
Q1	Name the type of culture which is prepared by inoculating directly from the tissue of an organism to culture media? a) Primary cell culture b) Secondary cell culture c) Cell lines d) Transformed cell culture	1.5	CO3
Q2	Which of the following is NOT the part of growth medium for animal culture? a) Starch b) Serum c) Carbon source d) Inorganic salts	1.5	CO5
Q3	In animal cell culture CO ₂ is generally maintained at ____% a. 15% b. 10% c. 5% d. 2%	1.5	CO1
Q4	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. c. using speculative information to infer something about the known. a. a "best guess" approach.	1.5	CO1
Q5	Subculturing a cell line always increase the passage number. a) True b) False	1.5	CO2

Q6	In cell culture media accumulation of lactate leads to a. no loss of cell viability b. increase in pH of culture hence loss of cell viability c. no change in pH of culture but loss of cell viability d. reduction in the pH of culture hence loss of cell viability	1.5	CO2
Q7	Trypsin is used for dissociating the tissue into single cells. a) True b) False	1.5	CO2
Q8	Which information can be obtained from an acute toxicity study? a. Median toxic dose (TD50) b. Median lethal dose (LD50) c. No Observed Adverse Effect Level (NOEL) a. All of the above	1.5	CO2
Q9	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: a. Potentiation b. Additivity c. Synergism d. Agonism	1.5	CO2
Q10	Which is true about the LD ₅₀ ? 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
Q11	Which of the following statements are True for handling of cells and culture media? I. Cells and culture media should be free from contaminating microorganisms. II. All cell culture materials should be maintained under sterile conditions. III. All surfaces within the culture area should be non-porous to prevent adsorption of media and other materials that may provide a good breeding ground for microorganisms, resulting in the infection of the culture.	1.5	CO5

	<ul style="list-style-type: none"> a. I only. b. II and III only. c. I and III only. d. All of the above. 		
Q12	<p>Dose is defined as the _____</p> <ul style="list-style-type: none"> a. The amount of substance which is released into the environment. b. Amount of substance which reaches the target site in the body. c. Amount of substance which enters the body. a. Amount of substance is bound to the plasma proteins 	1.5	CO2
Q13	What are antibiotics? Give one example.	1.5	CO1
Q14	<p>Thalidomide is known for its _____ effects.</p> <ul style="list-style-type: none"> a. Teratogenic b. Carcinogenic c. Mutagenic d. Neurotoxic 	1.5	CO1
Q15	<p>What is a graded dose-response?</p> <ul style="list-style-type: none"> a. Continuous responses in an individual against varying doses of a substance. b. Responses to a single exposure at different time intervals. c. Effects other than the major one against a dose of a substance. d. Individual responses distributed in a population to different doses of a substance. e. A and C 	1.5	CO1
Q16	<p>The term 'toxin' generally refers to toxic substances that are _____</p> <ul style="list-style-type: none"> a. Any kind of poison. b. Produced by biological systems such as plants, animals, fungi, or bacteria. c. Toxicants are released as industrial effluents. a. Toxic elements of inorganic origin such as mercury, lead, arsenic etc. 	1.5	CO2
Q17	<p>Who is most likely to exhibit toxic effects of environmental tobacco smoke (ETS)?</p> <ul style="list-style-type: none"> a. An athlete b. A child in 2nd grade c. A driver who smokes d. A person with asthma 	1.5	CO5

Q18	Toxicity targets of nonsteroidal anti-inflammatory drugs (NSAIDs) include_____. a. A CNS and muscles b. Musculoskeletal system and liver c. GI tract and kidneys d. Respiratory system	1.5	CO5
Q19	Which one belongs to zero order kinetics? a. Half-life remains constant even if the concentration of the compound is increased b. Half-life is increased with the increasing concentration of the compound c. Half-life is indirectly proportional to the amount of excretion d. Half-life is directly proportional to the amount of excretion	1.5	CO2
Q20	Cytochrome P450 enzymes, which catalyze the largest portion of phase I biotransformation, are located in _____ of the cell. a. Cytoplasm b. Endoplasmic reticulum c. Mitochondria d. Lysosomes	1.5	CO1
Section B (4Qx5M=20 Marks)			
Q 1	Discuss the procedure for skin sensitization tests.	5	CO2
Q2	Briefly describe microbiological assay of vitamins.	5	CO2
Q3	Write a note on mechanism of endotoxin action.	5	CO3
Q4	What is bioassay? Discuss the types of bioassay.	1+4	CO5
Section C (2Qx15M=30 Marks)			
Q1	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
Q2	Write a detailed note on one <i>in vitro</i> and one <i>in vivo</i> test for pyrogen	(7.5+7.5)	CO3
Section D			

(2Qx10M=20 Marks)

Q 1	Write note on procedure of: a. Acute toxicity b. Carcinogenicity testing	(5+5)	CO2
Q2	Discuss: a. Assessing safety of packaging material b. 3Rs in animal experimentations	(5+5)	CO4