Name: **Enrolment No:**	

UPES

End Semester Examination, May 2025

Course: Perspectives in Toxicology — **Semester : II**

Program: MSc. Microbiology — **Duration : 3 Hours**

Course Code: HSTX7002O — **Max. Marks: 100**

Instructions: Attempt all questions as per the instructions

S. No.	Section A Short answer questions/ MCQ/T&F (20Qx1.5M= 30 Marks)	Marks	COs
Q 1	Define teratogenicity with example.	**1.5**	**CO1**
Q 2	Differentiate between poison and toxin.	**1.5**	**CO1**
Q 3	What is a graded dose-response? 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.	**1.5**	**CO1**
Q 4	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**
Q 5	Which of the following refers to the minimal dose at which toxic effects are observed? a. NOAEL b. LOAEL c. LD50 d. LC50	**1.5**	**CO1**
Q 6	Which type of food processing produces acrylamide? a. Grilling b. Boiling c. Frying d. Freezing	**1.5**	**CO1**
Q 7	Which of the following is a protective measure for workers exposed to toxic materials? a. Ventilation systems b. Personal protective equipment (PPE) c. Regular health checks	**1.5**	**CO1**

	d. All of the above		
Q 8	Define receptors	**1.5**	**CO1**
Q 9	Polychlorinated dibenzodioxins (PCDDs) are associated with which of the following? a. Fish consumption b. Industrial waste c. Poultry d. Canned vegetables	**1.5**	**CO2**
Q 10	Which one of the following is true regarding Dose-response relationship? **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**	**CO2**
Q 11	Give example of two industrial metals which may lead to toxicity.	**1.5**	**CO2**
Q 12	The term "toxin" generally refers to toxic substances that are _____ a. Any kind of poison. b. Produced by biological systems such as plants, animals, fungi, or bacteria. c. Toxicants are released as industrial effluents. d. Toxic elements of inorganic origin such as mercury, lead, arsenic etc.	**1.5**	**CO2**
Q 13	Which is true regarding chronic exposure? a. Repeated exposure occurring for a period of three months. b. Repeated exposure occurring for a period of one month. c. Repeated exposure occurring for a period of more than three months. d. Repeated exposure occurring for a period of one day	**1.5**	**CO2**
Q 14	Which of the following toxicity can occur due to single exposure? a. Acute toxicity b. Sub-acute toxicity c. Sub-chronic toxicity d. Chronic toxicity	**1.5**	**CO2**
Q 15	Which of the following is an example of a food additive toxicant? a. Artificial colors b. Polyphenols c. Omega-3 fatty acids d. Fiber	**1.5**	**CO2**
Q 16	Biosensors used for toxicity testing are often based on: a. Enzymatic reactions b. DNA sequencing c. Immunological reactions d. All of the above	**1.5**	**CO2**
Q 17	Bagassosis is primarily caused by exposure to: a. Cotton dust	**1.5**	**CO3**

	b. Sugarcane dust c. Coal dust d. Wood dust		
Q 18	Polychlorinated biphenyls (PCBs) are commonly found in: a. Seafood b. Soft drinks c. Livestock d. Both a and b	**1.5**	**CO3**
Q 19	Persistent organic pollutants (POPs) are of concern because they are: a. Easily biodegradable b. Non-toxic to humans c. Accumulated in the food chain d. Present in industrial areas only	**1.5**	**CO4**
Q 20	Who is most likely to exhibit toxic effects of environmental tobacco smoke (ETS)? a. An athlete b. A child in 2nd grade c. A driver who smokes d. A person with asthma	**1.5**	**CO4**
Section B **(4Qx5M=20 Marks)**			
Q 1	Discuss the role of institute ethics committee in animal studies.	5	CO4
Q 2	What are the routes of administration for toxins in body?	5	CO1
Q 3	Describe two-generation reproduction toxicity studies.	5	CO4
Q 4	What is bioassay? Discuss the types of bioassays.	1+4	CO5
Section C **(2Qx15M=30 Marks)**			
Q 1	What is biotransformation. Discuss the phases of biotransformation.	15	CO1, CO2
Q 2	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
Section D **(2Qx10M=20 Marks)**			
Q 1	Write note on procedure of: a. Chronic toxicity b. Neurotoxicity testing	5+5	CO2
Q 2	Write a detailed note on Environmental risk and occupational hazards	10	CO2, CO4