1511E1251

Candidate's Seat No : _____

M.Sc. Sem.-3 Examination

503

Toxicology

November-2025

Time : 2-30 Hours] **[Max. Marks : 70**

Q1A	Discuss in detail the various physiological and pathological factors that modify the action of drugs in the human body.	7 Marks
Q1B	Describe the receptor occupation theory. Discuss how agonists, antagonists, partial agonists, and inverse agonists differ in their receptor activity and intrinsic efficacy.	7 Marks
	OR	
Q1A	Describe the major types of drug action — stimulation, depression, irritation, replacement, and cytotoxic action — with appropriate examples for each.	7 Marks
Q1B	What is pharmacogenetics? Explain how genetic variations influence individual responses to drugs, citing suitable clinical examples.	7 Marks
Q2A	What are OECD Guidelines? Describe the OECD Guidelines for the Testing of Chemicals in detail.	7 Marks
Q2B	What constitutes illicit traffic under the Narcotic Drugs and Psychotropic Substances (NDPS) Act? Explain the legal implications and enforcement mechanisms.	7 Marks
	OR	
Q2A	Describe in detail the Clinical Trial Guidelines as per Schedule Y of the Drugs and Cosmetics Rules.	7 Marks
Q2B	Describe the role of the Food and Drug Administration (FDA) in the pharmaceutical industry, including its responsibilities in drug approval, safety monitoring, and regulatory compliance.	7 Marks
Q3A	Explain the basic concept of nanoparticles. Discuss the differences between natural and engineered nanoparticles with suitable examples.	7 Marks
Q3B	Discuss the mechanisms by which nanoparticles produce toxicity in living systems. Mention any three important toxic effects caused by nanomaterials.	7 Marks
	OR	
Q3A	What are the major challenges in toxicological risk assessment of nanomaterials? Suggest approaches to evaluate and minimize their toxic impact.	7 Marks
Q3B	Describe the process of cellular uptake (internalization) and intracellular trafficking of nanomaterials. How do these processes	7 Marks

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	influence their biological effects?	
Q4A	Elaborate on the different types of mycotoxins and their associated health hazards in humans and animals.	7 Marks
Q4B	Explain the mechanism of action and symptoms of Paralytic Shellfish Poisoning (PSP) caused by saxitoxin.	7 Marks
	OR	
Q4A	Compare endotoxins and exotoxins based on their structure, source, heat stability, and mechanism of action.	7 Marks
Q4B	Discuss the mechanism of aflatoxin B_1 toxicity in the liver and its carcinogenic potential.	7 Marks
Q5	**Answer the following questions (Any Seven)**	**14 Marks**
I	Define "placebo effect" and mention one situation where it is used.	2 Marks
II	What is meant by "drug tolerance"? Give one example.	2 Marks
III	Mention any two examples of drugs that act through enzyme inhibition.	2 Marks
IV	Give the two examples of members and observers of ICH.	2 Marks
V	Define charas and Ganja according to NDPS Act.	2 Marks
VI	What is acute and repeat dose toxicity.	2 Marks
VII	What is the role of OECD in pharmaceutical Industry.	2 Marks
VII	What information does the Appendix II of Schedule Y give.	2 Marks
IX	Name any two pathological conditions that can alter drug response.	2 Marks
X	Define "biomagnification" with an example.	2 Marks
XI	What is the role of the B subunit in AB exotoxins?	2 Marks
XII	Give one example each of neurotoxic and cytotoxic bacterial toxins.	2 Marks

BEST OF LUCK