



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

SCHOOL OF NURSING MIDWIFERY AND PARAMEDICAL SCIENCES

**UNIVERSITY REGULAR EXAMINATIONS
2021/2022 ACADEMIC YEAR
FIRST YEARS- SECOND TRIMESTER**

**FOR THE DEGREE OF BACHELOR OF SCIENCE IN
OCCUPATIONAL HEALTH AND SAFETY**

COURSE CODE: NCO 126

COURSE TITLE: INTRODUCTION TO TOXICOLOGY

DATE : MONDAY 19TH APRIL , 2022

TIME: 3PM-6PM

INSTRUCTIONS TO CANDIDATES

All questions are compulsory

DURATION: 3 Hours

MMUST observes ZERO tolerance to examination cheating

This paper consists of 4 (Four) printed pages. Please turn over.

SECTION A: Multiple Choice questions (MCQs) 15 Marks

Choose the most appropriate answer

1. The phrase that best defines "toxicodynamics" is the
 - a) linkage between exposure and dose
 - b) linkage between dose and response
 - c) dynamic nature of toxic effects among various species
 - d) dose range between desired biological effects and adverse health effects

- 2..... are the drugs which possess the ability of depressing central nervous system
 - a) Anticonvulsants
 - b) Antineoplastics
 - c) Narcotics
 - d) Antidotes

3. Which one of the following is an organophosphorus compound;
 - a) Atropine Sulphate
 - b) Pralidoxime
 - c) Naloxone
 - d) Both (b) & (c)

4. Which one of the following is the antidote for organophosphate intoxication?
 - a) n-acetylcysteine
 - b) Ethanol/fomepizole
 - c) Atropine
 - d) Naloxone/nalmefene

5. Absorption of a poison is likely more, in which one of the following routes;
 - a) Lungs
 - b) GIT tract
 - c) Skin
 - d) Is same in all routes

6. Which one of the following is the antidote can be used for Heroin intoxication?
 - a) Atropine
 - b) Ethanol
 - c) Oxygen
 - d) Naloxone

7. Which one of the following is a symptom of opioid abuse?
 - a) Dry skin
 - b) Hair loss
 - c) Stomach ulcers
 - d) None of the above

8. Which one of the following is the antidote for opioid intoxication?
 - a) n-acetylcysteine
 - b) Ethanol/fomepizole
 - c) Oxygen/hyperbarics
 - d) Naloxone/nalmefene

9. In the human body, toxicological processes ultimately take place at which level?
- cell
 - tissue
 - organ
 - organ system
10. Which one of the following is a direct toxic mechanism?
- Binding the poison in the cellular metabolism
 - Enzyme inhibition
 - Burning of the skin by mineral acid
 - Formation of toxic metabolites
10. The interimmediate syndrome or group of signs and symptoms due to organophosphate poisoning are/is
- Cholinergic signs and symptoms with hyper secretion
 - Polyneuropathy
 - Delayed neuropathy
 - None of the above
11. Activated charcoal treatment is useful in all the following except
- Carbamazepine poisoning
 - Dapzone poisoning
 - Quinine poisoning
 - Lithium poisoning
12. The most common target organ for toxicity is in a human body
- The brain
 - The Liver
 - The Heart
 - The lungs
13. The degree of penetration of a toxicant depends on;
- Size/shape.
 - Lipid solubility/hydrophobicity.
 - Charge/polarity.
 - All of the above

TRUE/ FALSE STATEMENTS

14. Opioid dependence is the same as opioid addiction.
- True
 - False
15. Toxicology is the study of poisons and the identification of drugs and other substances a person may have used for medicinal purposes
- True
 - False

SECTION B Short Answer Questions (SAQs) Answer all the questions in this section= 45 Marks

1. Describe how you can measure the levels of toxicity of a particular compound (6 Marks)
2. Describe any four (4) types of toxicologists (6 Marks)
3. Differentiate between
 - (a) a poison and a drug (2 Marks)
 - (b) Bioaccumulation and bio transformation (2 Marks)
 - (c) a toxin and a toxicant (2 Marks)
 - (d) Toxidrome and xenobiotic (3 Marks)
4. Explain your understanding of the term relative toxicity as used in toxicology (3 Marks)
5. Describe the different types of antagonistic chemicals reactions or responses (8 Marks)
6. Describe the following types of toxic substances exposures or poisoning.
 - (a) Cannabis sativa (4 Marks)
 - (b) Carbon Monoxide [CO] (5 Marks)
 - (c) Alcoholism (6 Marks)
 - (d) Cyanide poisoning (5 Marks)

SECTION C- Long Answer Questions (LAQs) Answer all the questions in this section=40 Marks

1. When a chemical substance is exposed to a human being, different type of reactions are elicited, sometimes known as 'end points'. Describe these different end points (20 Marks)
2. Describe;
 - (i) The different classification of toxicity (10 Marks)
 - (ii) Phase/step of exposure in toxicosis (10 Marks)

END