



(University of Choice)

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

MAIN CAMPUS

**UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR**

**MAIN EXAMS
FOR THE DEGREE
OF
BACHELOR OF OPTOMETRY**

COURSE CODE: BML 202

COURSE TITLE: GENERAL PHARMACOLOGY AND
THERAPEUTICS

DATE: 26/04/2022

TIME: 3-5pm

INSTRUCTIONS TO CANDIDATES

ANSWER ALL QUESTION

TIME: 3 Hours

MMUST observes ZERO tolerance to examination cheating

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MULTIPLE CHOICE QUESTION – ANSWER ALL QUESTIONS (30 MARKS)

1. Pharmacodynamics describes the interaction between a drug and the biological subsystem, hence, the effects of the drug on the body at receptor level. The following are the effects of the drug to the body EXCEPT;
 - a. Absorption
 - b. Modification
 - c. Detoxification
 - d. Assimilation

2. In drug therapeutics, the adaptation of the dosage regimen in function of clinical characteristics of an individual aiming to achieve the best possible therapeutic efficacy at the lowest risk of unwanted side effects is referred to as?
 - a. Dosage individualization
 - b. Drug adaptation
 - c. Drug-regimen tolerance
 - d. Response individualization

3. Which of the following statements about reversibility of drug binding is FALSE?
 - a. All antagonists bind irreversibly to the receptor
 - b. Not all agonists bind reversibly to the receptor
 - c. Agonist dissociates readily from the receptor
 - d. If agonist concentration is increased it will displace an antagonist from the receptor

4. The study of how drugs exert their effects on the body to produce therapeutic effects is generally referred to as what?
 - a. Pharmacokinetics
 - b. Pharmacodynamics
 - c. Toxicology
 - d. Pharmacology

5. The 20th century definition of toxicology has become even more focused in its definition and use of poisons, due to marked improvement in diagnosis and management with antidote
 - a. TRUE
 - b. FALSE

6. The study of the time course of a drug from absorption, through to exit from the body is best referred to as;
 - a. Modification
 - b. Pharmacology
 - c. Pharmacokinetics
 - d. Pharmacodynamics

7. Bioassays are commonly applied to characterize all of the following EXCEPT?
 - a. Analysis of substance Biological Properties
 - b. To study a Biological Process
 - c. To investigate for fetal causes of drug toxicity
 - d. To detect the presence and quantity of a substance in a sample

8. Toxicology is broadly divided into different classes depending on all the following EXCEPT?
 - a. Physio-chemical nature
 - b. Research methodology
 - c. Socio-medical
 - d. Organ/specific effects

9. The key principle in toxicology include all of the following EXCEPT?
 - a. Knowledge of the chemical form
 - b. Knowledge of the drug-receptor interaction
 - c. Knowledge of the duration and frequency of exposure
 - d. Knowledge of the dose-response effects

10. Which of the following is CORRECT about descriptive toxicology?
 - a. It deal with the mechanism of toxic effects of chemicals on living organisms
 - b. It deal with the toxicity tests on chemicals exposed to human beings and environment as a whole
 - c. It deal with investigation on whether the chemical substances has low risk to be used in living systems
 - d. It deal with the regulation of food and drug administration as well as allied products

11. A rigorously controlled test of a new drug or a new invasive medical device on human subjects before being made available for general clinical use is referred to as?
 - a. Toxic analyses
 - b. Clinical analyses
 - c. Environmental trials
 - d. Clinical trials

12. Drug metabolism can take place in all of the following organ systems, EXCEPT;
 - a. Placenta
 - b. Intestine
 - c. Liver
 - d. Gastrointestinal tract

13. The following are all routes of drug poisoning, EXCEPT?
 - a. Oral route
 - b. Dermal route

- c. Radial route
 - d. Inhalational route
14. The following are all potential causes of drug toxicity, EXCEPT?
- a. Industrial & house hold chemicals
 - b. Environmental contaminants
 - c. Drugs of abuse
 - d. Gums and oils from glycosides
15. A protein compound that is a common enzyme considered as a helper molecules which assist in biochemical transformation is called;
- a. Co-factor molecule
 - b. Co-enzyme molecule
 - c. Inducer molecule
 - d. None of the above
16. Which of the following is FALSE about occupational toxicology?
- a. It deals with chemical found at workplace
 - b. Agents industrial workers are exposed to during the synthesis, manufacturing or packaging of substances
 - c. It deals with the knowledge of potentially deleterious impact of chemicals, present as pollutants of the environment, to living organisms
 - d. Amount of pesticides agricultural workers are exposed to during application in field
17. Which of the following source is NOT associated with drugs and biological products
- a. Fecal materials
 - b. Microorganisms
 - c. Plants and animals
 - d. Mineral products
18. Biological testing procedure for estimating the concentration of a pharmaceutical drug substance in a formulated drug product or bulk material is called?
- a. Bioavailability
 - b. Bioassay
 - c. Biodiversity
 - d. Biotoxicity
19. The statement that, "*All substances are poisons; there is none which is not a poison. The right dose differentiates a poison from a treatment*", is credit to whom among the following scientists?
- a. Paracelsus (1493-1541)
 - b. Galen (1506-1578)
 - c. Hildegard von Bingen (1766-1848)

- d. Typhoid Mary (1927-1998)
20. With regards to drugs' safety and efficacy, natural products are always safer than synthetic, man-made drugs.
- TRUE
 - FALSE
21. Most drug receptors that provide a needed diverse and specificity of shape and change are
- Alkaloid structures
 - Nucleic acid structures
 - Protein polyvinyl structures
 - Protein-polypeptide structures
22. An agonists is a drug which binds to a drug-receptor and activates it to produce pharmacological response. Which of the following is NOT true of an agonist?
- The cause enzyme deactivation
 - Their response mimic that of the local hormone
 - The have ability to combine with other drugs
 - The produce response from a membrane
23. Antagonists are drugs that weakens the effects of an agonist. This may be achieved through all of the following EXCEPT?
- By binding to a receptor at the same site as the endogenous agonist
 - Activating the response achieved by the natural stimulus
 - May not fit exactly to a receptor site but still elicit response
 - By acting as an agonist at one receptor but not at another
24. Which of the following characteristics of NOT a feature of drugs binding ability at a receptor site?
- Affinity
 - Specificity
 - Sensitivity
 - Efficacy
25. A natural endogenous chemical substance that has a specific shape to fit into a receptor site and cause a pharmacological response is referred to as?
- Nerve impulse
 - Natural stimulus
 - Antagonist
 - Neurotransmitter
26. The following factors will affect absorption, Except;
- The size of blood-aqueous barrier

- b. The molecular properties of the drug
 - c. The viscosity of the drug vehicle
 - d. Functional status of tissue forming the barrier-to-penetration
27. The study of the nature, properties, effects and treatment of adverse drug reactions is best referred to as?
- a. Pharmacology
 - b. Toxicology
 - c. Adverse drug reaction
 - d. Drug Entomology
28. Which of the following is NOT a chemical substance having useful action on living tissues?
- a. Potency
 - b. Selectivity
 - c. Efficacy
 - d. Specificity
29. Which of the following famous people from medical history did not contribute to the major invents of drug and pharmacological history?
- a. Hippocrates
 - b. Galen
 - c. Hildegarde von Bingen
 - d. Typhoid Mary
30. Alkaloids are natural, organic nitrogen-containing compounds that are alkaline and usually bitter-tasting. Which of the following is NOT a pharmacological use of plant alkaloids?
- a. As analgesic agents in cocaine
 - b. As laxative agents in psyllium
 - c. As antiasthma drugs in ephedrine
 - d. Poisons in Strychnine

LONG ESSAY – ANSWER ALL QUESTION (40 MARKS)

1. With regards to drugs information, discuss the important basic information that need to be provided about a drug by a manufacturer. As a health professional, what are the key questions you must be ready to easily provide to your patients about a drug?

10 Marks

2. With regards to drugs dosage measurements and calculations, the main system of measurement in use for administration of drugs is the metric system. Attempt a detail discussion of the Metric system of drugs measurement. As per the International system of Units, list the conventional style of notations for the metric system of drugs measurement.

15

Marks

3. The two main divisions of pharmacology are Pharmacokinetic and Pharmacodynamics. With appropriate diagram, where necessary, attempt a detail discussion of the schematic processes of Pharmacokinetic.

15 Marks