



MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

Direct entry

UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR

First year second TRIMESTER EXAMINATIONS

FOR THE DEGREE OF
BACHELOR OF SCIENCE IN PARAMEDICAL SCIENCES

COURSE CODE: NPP 125

COURSE TITLE. Clinical pharmacology and therapeutics

MAIN EXAM

DATE: Friday 14th April, 2023

TIME: 1130-0230pm

INSTRUCTIONS TO CANDIDATES

Answer all Questions

TIME: 3 Hours

MULTIPLE CHOICE QUESTIONS (20 MARKS)

1. Regarding termination of drug action
 - a) Drug must be exerted from the body to terminate their action
 - b) Metabolism of drugs always increases their water solubility
 - c) Metabolism of drugs always abolishes their pharmacologic activity
 - d) Hepatic metabolism and renal excretion are the two most important mechanisms involved
2. The following is a phase II drug metabolizing reaction
 - a) Acetylation
 - b) Deamination
 - c) Hydrolysis
 - d) Oxidation
3. Biotransformation of drugs is primarily directed to
 - a) Activate the drug
 - b) Inactivate the drug
 - c) Convert lipid soluble drugs into nonlipid soluble metabolites
 - d) Convert nonlipid soluble drugs into lipid soluble metabolites
4. A prodrug is
 - a) The prototype member of a class of drugs
 - b) The oldest member of a class of drugs
 - c) An inactive drug that is transformed in the body to an active metabolite
 - d) A drug that is stored in body tissues and is then gradually released in the circulation
5. An undesirable effect of a drug that occurs at therapeutic doses and can be predicted from its pharmacological actions is called
 - a) Side effect
 - b) Toxic effect
 - c) Allergic reaction
 - d) Idiosyncrasy
6. Relationship between arterial blood pressure (BP), cardiac output (CO) and peripheral vascular resistance (PVR) can be described as
 - a) $BP = CO \times PVR$
 - b) $BP = CO/PVR$
 - c) $BP = PVR/CO$
 - d) None of the above
7. What drug is used to prevent embolism in the lung and during myocardial infarction?
 - a) Alteplase
 - b) Human growth hormone
 - c) Granulocyte-macrophage colony – stimulating factor (GM-CSF)
 - d) None of the above

8. The mechanism of methylxanthines action is:
 - a) Inhibition of the enzyme phosphodiesterase
 - b) Beta2 -adrenoreceptor stimulation
 - c) Inhibition of the production of inflammatory cytokines
 - d) Inhibition of M-cholinoreceptors
9. The following M-cholinoblocking agents is used especially as an anti-asthmatic?
 - a) Atropine
 - b) Ipratropium
 - c) Platiphylline
 - d) Metacin
10. The drug belonging to proton pump inhibitors is?
 - a) Pirenzepine
 - b) Ranitidine
 - c) Omeprazole
 - d) Trimethaphan
11. This drug is a non-peptide angiotensin II receptor antagonist:
 - a) Clonidine
 - b) Captopril
 - c) Losartan
 - d) Diazoxide
12. The following property combinations is peculiar to the majority of NSAIDs
 - a) Antihistaminic, antipyretic, analgesic
 - b) Immunodepressive, anti-inflammatory, analgesic
 - c) Antipyretic, analgesic, anti-inflammatory
 - d) Anti-inflammatory, immunodepressive, antihistaminic
13. The following NSAIDs is a propionic acid derivative?
 - a) Ibuprofen
 - b) Indomethacin
 - c) Metamizole (Analgin)
 - d) Diclofenac
14. Methylxanthine drugs such as aminophylline cause which one of the following?
 - a) Vasoconstriction in many vascular beds
 - b) Decrease in the amount of cAMP in mast cells
 - c) Bronchodilation
 - d) Activation of the enzyme phosphodiesterase
15. The reason of diuretics administration for hypertension treatment is:
 - a) Block the adrenergic transmission
 - b) Diminishing of blood volume and amount of Na⁺ ions in the vessels endothelium
 - c) Depression of rennin-angiotensin-aldosterone system
 - d) Depression of the vasomotor center

16. The diuretic agent that has a potent and rapid effect is
- Furosemide
 - Spironolactone
 - Dichlothiazide
 - Indapamide
17. Angiotensin converting enzyme inhibitors (ACEIs) have the side effect of dry cough because they prevent degradation of which substance?
- Angiotensinogen
 - Angiotensin I
 - Bradykinin
 - Renin
18. Which of the following drugs belongs to coumarin derivatives?
- Heparin
 - Enoxaparin
 - Dalteparin
 - Warfarin
19. Which of the following agents is a full antagonist of opioid receptors?
- Meperidine
 - Buprenorphine
 - Naloxone
 - Butorphanol
20. Which of the following agents is related to tricyclic antidepressants?
- Nefazodon
 - Amitriptyline
 - Fluoxetine
 - Isocarboxazid

SHORT ANSWER QUESTIONS(40 MARKS)

1. Define the following terms as used in pharmacology
 - a. Pharmacognosy (1 mark)
 - b. Idiosyncrasy (1 mark)
 - c. Synergy (1 mark)
 - d. Placebo (1 mark)
 - e. Agonist (1 mark)
2. State three uses of drugs giving 1 example in each use (3 marks)
3. State four sources of drugs give one drug example for each source (4 marks)
4. Explain the management of a patient in status asthmatics (6 marks)
5. Define pharmacokinetics and explain the 4 processes of pharmacokinetics (8 marks)
6. State three pharmacologic strategies of treating seizure disorders (6 marks)
7. State 4 classes of insulin therapy (4 marks)
8. Outline four (4) extrapyramidal side effects of antipsychotic agents (4 marks)

LONG ANSWER QUESTIONS (40 MARKS)

1. Mr. X is 56 years old, has been diagnosed with hypertension
 - a. Describe the significance of the renin angiotensin aldosterone system in treatment of hypertension (7 marks)
 - b. State the mechanism of action of any three classes of antihypertensive drugs that act on the renin angiotensin aldosterone system giving two examples in each class (8 marks)
 - c. State five (5) health education messages you would share with his relatives on discharge home (5marks)
2. Master X, with complains of epigastric pain has been diagnosed to have peptic ulcer disease.
 - a. Name and explain any 5 drug classes used to manage peptic ulcer disease stating their mechanism of action (10 marks)
 - b. Master X was put on cimetidine tablets, state any 4 anticipated side effects (4 marks)
 - c. State the discharge home health advice on drugs that you will share with master X's mother (6 marks)

THE END

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