



**KENYA MEDICAL TRAINING COLLEGE
FACULTY OF NURSING**

PERIOD: END OF se EXAMINATION FOR
CLASS: KRCHN (SEPTEMBER 2018)
SUBJECT: PHARMACOLOGY CAT

DATE: JUNE 2019 **TIME:** 2 HOURS

INSTRUCTIONS TO THE CANDIDATES

1. ENTER YOUR EXAMINATION NUMBER on every sheet of paper used
2. READ THE QUESTION carefully and answer only WHAT IS ASKED
3. FOR MULTIPLE CHOICE QUESTIONS write the correct answer in CAPITAL LETTERS
4. FOR SHORT ANSWER THE QUESTIONS, follow the instructions given by the invigilator
5. FOR LONG ANSWER QUESTIONS, answer each question on a separate sheet of paper
6. Mobile phones and smart watches are **NOT** allowed in the examination hall

PHARMACOLOGY FOR NURSES CAT SEPTEMBER 2018 CLASS

1. What term is used to describe a more gradual decrease in responsiveness to a drug, taking days or weeks to develop?
 - a) Refractoriness - disease does not respond to treatment
 - b) Cumulative effect - rate of elimination slower than rate of absorption
 - c) Tolerance
 - d) Tachyphylaxis - Acute tolerance
2. Pharmacodynamics involves the study of following:
 - a) Mechanisms of drug action
 - b) Biotransformation of drugs in the organism
 - c) Distribution of drugs in the organism
 - d) Excretion of drug from the organism

Pharmacokinetics
3. An agonist is a substance that:
 - a) Interacts with the receptor without producing any effect.
 - b) Increases concentration of another substance to produce effect.
 - c) Interacts with plasma proteins and doesn't produce any effect
 - d) Interacts with the receptor and initiates changes in cell function, producing various effects
4. An antagonist is a substance that:
 - a) Binds to the receptors and initiates changes in cell function, producing maximal effect.
 - b) Binds to the receptors and initiates changes in cell function, producing submaximal effect
 - c) Interacts with plasma proteins and doesn't produce any effect
 - d) Binds to the receptors without directly altering their functions
5. Half-life ($t_{1/2}$) is the time required to:
 - a) Change the amount of a drug in plasma by half during elimination
 - b) Metabolize a half of an introduced drug into the active metabolite
 - c) Absorb a half of an introduced drug
 - d) Bind a half of an introduced drug to plasma proteins
6. If two drugs with the same effect, taken together, produce an effect that is equal in magnitude to the sum of the effects of the drugs given individually, it is called as:
 - a) Antagonism
 - b) Potentiation
 - c) Additive effect
 - d) None of the above

(Synergism)

7. What does the term "potentiation" mean?
- Cumulative ability of a drug
 - Hypersensitivity to a drug
 - Fast tolerance developing
 - Intensive increase of drug effects due to their combination
8. Idiosyncratic reaction of a drug is:
- A type of hypersensitivity reaction
 - A type of drug antagonism
 - Unpredictable, inherent, qualitatively abnormal reaction to a drug
 - Quantitatively exaggerated response
9. A competitive antagonist is a substance that:
- Interacts with receptors and produces submaximal effect
 - Binds to the same receptor site and progressively inhibits the agonist response
 - Binds to the nonspecific sites of tissue
 - Binds to one receptor subtype as an agonist and to another as an antagonist
10. Tolerance and drug resistance can be a consequence of:
- Change in receptors, loss of them or exhaustion of mediators
 - Increased receptor sensitivity
 - Decreased metabolic degradation
 - Decreased renal tubular secretion
11. The most rapid eliminated drugs are those with high glomerular filtration rate and actively secreted but aren't passively reabsorbed:
- True
 - False
12. Biotransformation of the drugs is to render them:
- Less ionized
 - More pharmacologically active
 - More lipid soluble
 - Less lipid soluble
13. Parenteral administration:
- Cannot be used with unconsciousness patients
 - Generally results in a less accurate dosage than oral administration
 - Usually produces a more rapid response than oral administration
 - Is too slow for emergency use
14. The main mechanism of most drugs absorption in GI tract is:
- Active transport (carrier-mediated diffusion)
 - Filtration (aqueous diffusion)
 - Endocytosis and exocytosis
 - Passive diffusion (lipid diffusion)

15. The term "active transport" means :
- Transport of drugs through a membrane by means of diffusion
 - Transport without energy consumption
 - Engulf of drug by a cell membrane with a new vesicle formation
 - Transport against concentration gradient
16. Drug resistance is a term used to describe the loss of effectiveness of antimicrobial drugs. This consideration is:
- True
 - False
17. The following drug is associated with the reaction of extreme photosensitivity:
- Digitalis
 - Niacin
 - Tetracycline ✓
 - Fluoroquinolones
18. An antagonist is a substance that:
- Binds to the receptors and initiates changes in cell function, producing maximal effect
 - Binds to the receptors and initiates changes in cell function, producing submaximal effect
 - Interacts with plasma proteins and doesn't produce any effect
 - Binds to the receptors without directly altering their functions
19. Give the definition for a therapeutical dose:
- The amount of a substance to produce the minimal biological effect
 - The amount of a substance to produce effects hazardous for an organism
 - The amount of a substance to produce the required effect in most patients
 - The amount of a substance to accelerate an increase of concentration of medicine in an organism
20. Pick out the correct definition of a toxic dose:
- The amount of substance to produce the minimal biological effect
 - The amount of substance to produce effects hazardous for an organism
 - The amount of substance to produce the necessary effect in most of patients
 - The amount of substance to fast creation of high concentration of medicine in an organism
21. Norepinephrine produces:
- Vasoconstriction ✓
 - Vasodilatation
 - Bronchodilation
 - Decreased potassium concentration in the plasma

22. Which of the following property combinations is peculiar to the majority of NSAIDs?
- Antihistaminic, antipyretic, analgesic
 - Immuno-depressive, anti-inflammatory, analgesic
 - Antipyretic, analgesic, anti-inflammatory ✓
 - Anti-inflammatory, immunodepressive, antihistaminic
23. The following NSAIDs is a propionic acid derivative:
- Ibuprofen ✓
 - Indomethacin
 - Metamizole (Analgin)
 - Diclofenac
24. Which of the following NSAIDs is a selective COX-2 inhibitor?
- Piroxicam
 - Indomethacin
 - Celecoxib ✓
 - Diclofenac
25. Side effects of aspirin include following:
- Gastric upset (intolerance)
 - Salicylism (vomiting, tinnitus, decreased hearing, and vertigo)
 - Gastric ulcers and upper gastrointestinal bleeding
 - All of the above
26. Indicate whether true or false: Allergic reaction is:
- A local or generalized reaction of an organism to internal or external contact with a specific allergen to which the organism has been previously sensitized ✓
 - A localized protective reaction of tissue to irritation, injury, or infection, characterized by pain, redness, swelling, and sometimes a loss of function
27. The following groups of antibiotics demonstrates a bactericidal effect:
- Tetracyclines - bacteriostatic.
 - Macrolides - bacteriostatic
 - Penicillins ✓
 - All of the above ✓
28. Bacteristatic effect is:
- Inhibition of bacterial cell division ✓
 - Inhibition of young bacterial cells growth
 - Destroying of bacterial cells ✗
 - Formation of bacterial L-form

29. Tick the drug belonging to antibiotics-macrolides: ACE

- a) Neomycin
- b) Doxycycline
- c) Erythromycin ✓
- d) Cefotaxime

30. Antibiotic inhibiting bacterial RNA synthesis is:

- a) Erythromycin - inhibits protein synthesis - macrolid of 50s
- b) Rifampin - by blocking RNA transcription - bactericidal
- c) Chloramphenicol
- d) Imipinem - carbapenems

31. A patient is placed on a multi-drug regimen including bismuth for peptic ulcer disease. The nurse should instruct the patient that:

- a) One week of therapy should heal ulcers and relieve symptoms.
- b) When symptoms resolve, the ulcer will be healed.
- c) The tongue and stool may turn black on bismuth. ✓
- d) Single drug therapy is preferable.

32. A patient on anti-ulcer therapy complains of reduced libido and impotence. The nurse informs him that it may be associated with:

anti-ulcer

- a) Nizatidine - ↓ sperm count ✓
- b) Cimetidine - ↓ sperm count ✓
- c) Ranitidine
- d) Famotidine

33. Antibiotics inhibiting the bacterial cell wall synthesis are:

- a) Beta-lactam antibiotics ✓
- b) Tetracyclines - protein synthesis
- c) Aminoglycosides - protein synthesis
- d) Macrolides - protein synthesis

34. The following drugs is a gastric acid resistant:

- a) Penicillin G benzylpenicillin
- b) Penicillin V phenoxymethyl penicillin ✓
- c) Carbenicillin
- d) Procain penicillin

35. Combination of (sulfonamides with trimethoprim):

CO-trimoxazole

- a) Decreases the unwanted effects of sulfonamides
- b) Decreases the antimicrobial activity
- c) Increases the antimicrobial activity ✓
- d) Increases the elimination of sulfonamides