

**CHUKA**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**SECOND YEAR EXAMINATION FOR THE AWARD OF DEGREE  
OF BACHELOR OF SCIENCE (NURSING)**

**NURS 217: CLINICAL PHARMACOLOGY 1**

**STREAMS: BSC (NURS) Y2S1**

**TIME: 2 HOURS**

**DAY/DATE: TUESDAY 9/12/2014**

**2.30 P.M. – 4.30 P.M.**

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**INSTRUCTIONS:**

- **This paper has three sections**
- **All questions are Compulsory**

**MULTIPLE CHOICE QUESTIONS (15 MARKS)**

1. Biotransformation of the drugs is to render them:
  - (a) Less ionized
  - (b) More pharmacologically active
  - (c) More lipid soluble
  - (d) Less lipid soluble
2. Conjugation is:
  - (a) Process of drug reduction by special enzymes
  - (b) Process of drug oxidation by special oxidases
  - (c) Coupling of a drug with an endogenous substrate
  - (d) Solubilization in lipids
3. What is the type of drug-to-drug interaction which is the result of interaction at receptor, cell, enzyme or organ level?
  - (a) Pharmacodynamics interaction
  - (b) Physical and chemical interactions
  - (c) Pharmaceutical interaction
  - (d) Pharmacokinetic interaction

4. 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 to plasma proteins
  - (d) Bind a half of an introduced drug to plasma proteins
  
5. What does the term “bioavailability” mean?
  - (a) Plasma protein binding degree of substance
  - (b) Permeability through the brain-blood barrier
  - (c) Fraction of an uncharged drug reaching the systemic circulation following any route administration
  - (d) Amount of a substance in urine relative to the initial dose
  
6. The volume of distribution ( $V_d$ ) relates:
  - (a) Single to a daily dose of an administered drug
  - (b) An administered dose to a body weight
  - (c) An unchanged drug reaching the systemic circulation
  - (d) The amount of a drug in the body to the concentration of a drug in plasma
  
7. All the following are conjugation reactions except:
  - (a) Glucuronidation
  - (b) Sulfate formation
  - (c) Hydrolysis
  - (d) Methylation
  
8. Therapeutic index (TI) is:
  - (a) A ratio used to evaluate the safety and usefulness of a drug for indication
  - (b) A ratio used to evaluate the effectiveness of a drug
  - (c) A ratio used to evaluate the bioavailability of a drug
  - (d) A ratio used to evaluate the elimination of a drug
  
9. In a combination of drugs, the following can occur
  - (a) Tolerance
  - (b) Tachyphylaxis
  - (c) Accumulation
  - (d) Synergism
  
10. Chloramphenicol has the following unwanted effect:
  - (a) Nephrotoxicity
  - (b) Pancytopenia
  - (c) Hepatotoxicity
  - (d) Ototoxicity

11. 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
12. Give the definition for a therapeutic 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.
13. Bactericidal effect is:
- Inhibition of bacterial cell division
  - Inhibition of young bacterial cell growth
  - Destroying of bacterial cells
  - Formation of bacterial L-form
14. Which of the following drugs belong to antibiotics-monobactams:
- Ampicillin
  - Bicillin -5
  - Aztreonam
  - Imipinem
15. Which of the following drugs is penicillinase resistant:
- Oxacillin
  - Amoxicillin
  - Bicillin-5
  - Penicillin G

### SHORT ANSWER QUESTIONS (35 MARKS)

- Briefly explain two main ways through which drugs are excreted from the body. [4 marks]
- What is adverse drug reaction. List two types of adverse reactions. [3 marks]
- Define '**Acupuncture**' and briefly explain the role of acupuncture in alternative medicine [4 marks]
- Under the topic – penicillins
  - List four (4) examples [2 marks]
  - Outline two (2) indications [2 marks]
  - State two (2) side effects. [2 marks]

5. Outline two contraindications for quinolones. [4 marks]
6. With examples, state the three (3) mechanisms of action of antibacterials. [6 marks]
7. Briefly explain the four (4) pharmacokinetic processes. [8 marks]

**LONG ANSWER QUESTIONS (20 MARKS)**

1. (a) Outline the two Acts of parliament controlling drug therapy in Kenya. [4 marks]  
(b) Briefly describe the Phases of drug development. [8 marks]
  2. Briefly explain the application of nursing process in pharmacotherapy. [8 marks]
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