



**AMREF INTERNATIONAL UNIVERSITY**  
**SCHOOL OF MEDICAL SCIENCES**  
**DEPARTMENT OF NURSING AND MIDWIFERY SCIENCES**  
**KENYA REGISTERED COMMUNITY HEALTH NURSING**  
**End of April 2025 Semester Examinations**

**COURSE CODE AND TITLE: DNS: 118 Pharmacology I**

**DATE: 10-4-2025**

**TIME: 2 HOURS**

**Start: 0900 HOURS**

**Finish 1100 HOURS**

**INSTRUCTIONS**

1. This exam will be marked **out of 70 Marks**
2. ALL Questions are compulsory.
3. The Examination has Three Sections: Section A- Multiple Choice Questions, Section B: Short Answer Questions, Section C: Long Essay Questions
4. Answer all Questions in the ANSWER BOOKLET provided
5. Do not write anything on the question paper
6. Use the back of your booklet for rough work if need be.

**SECTION I: MULTIPLE CHOICES QUESTIONS**

**(20 MARKS)**

1. A condition that is treated with Co-trimoxazole: -
  - a) *Pneumocystis jirovecii* pneumonia (PCP)
  - b) Tuberculosis
  - c) Malaria
  - d) Fungal infections
2. The mechanism of action of sulfonamides is: -
  - a) Inhibition of folic acid synthesis
  - b) Inhibition of cell wall synthesis
  - c) Inhibition of protein synthesis
  - d) Disruption of cell membrane integrity
3. Combined chemotherapy of tuberculosis is used to: -
  - a) Decrease mycobacterium drug-resistance
  - b) Increase mycobacterium drug-resistance
  - c) Decrease the antimicrobial activity in the body
  - d) Increase the antimicrobial activity in the body
4. The following is the correct combination in co-trimoxazole: -
  - a) Sulfapyrazone + trimethoprim
  - b) Sulfadiazine + trimethoprim
  - c) Sulphamethoxazole + trimethoprim
  - d) Sulfasalazine + trimethoprim
5. Benzyl penicillin is not used orally because: -
  - a) It is destroyed by acid in stomach and absorption is incomplete
  - b) It is a very bitter drug and may cause severe GIT distress to most patients
  - c) It produces severe nausea and vomiting on oral administration
  - d) It corrodes the stomach and intestinal mucosa when taken orally

7. A patient was given a loading dose of 2000 mg of vancomycin prescription due to methicillin-resistant S-aureus. How many doses are appropriate for this prescription?
- a) 4 doses of 500 mg
  - b) 2 doses of 1000 mg
  - c) 1 dose of 2000 mg
  - d) 8 doses of 250 mg
8. The mechanism of action of beta-lactam antibiotics: -
- a) Inhibition of cell wall synthesis
  - b) Inhibition of protein synthesis
  - c) Inhibition of DNA replication
  - d) Disruption of cell membrane integrity
9. Digoxin is a drug with a narrow therapeutic window. This implies that: -
- a) It is potent
  - b) It treats a few diseases
  - c) It is efficacious
  - d) Small doses can cause toxicities
10. Glucuronidation of drugs by the liver is: -
- a) Example of pharmacodynamic
  - b) Example of pharmacokinetic
  - c) Increases distribution of drug
  - d) Increases absorption of the drug
11. An analgesic commonly used for post-operative pain management is: -
- a) Acetaminophen
  - b) Morphine
  - c) Gabapentin
  - d) Celecoxib
12. One of the following analgesics is a COX-2 selective inhibitor: -
- a) Ibuprofen
  - b) Naproxen
  - c) Celecoxib
  - d) Acetaminophen

13. An analgesic that has both antipyretic and anti-inflammatory properties is: -

- a) Acetaminophen
- b) Ibuprofen
- c) Tramadol
- d) Codeine

14. The primary receptor targeted by opioid analgesics is: -

- a) Alpha receptors
- b) Beta receptors
- c) Mu receptors
- d) Dopamine receptors

15. One of the following antibiotics has a disulfiram-like reaction with alcohol: -

- a) Metronidazole
- b) Vancomycin
- c) Erythromycin
- d) Doxycycline

16. Macrolides act by inhibiting: -

- a) DNA synthesis
- b) 30S ribosomal subunit
- c) 50S ribosomal subunit
- d) Peptidoglycan cross-linking

17. One of the following is a polyene antifungal: -

- a) Fluconazole
- b) Amphotericin B
- c) Terbinafine
- d) Caspofungin

18. The mechanism of action of azole antifungals involves inhibition of:

- a) Ergosterol synthesis
- b) DNA synthesis
- c) Protein synthesis
- d) RNA synthesis

19. The drug of choice for the treatment of schistosomiasis: -

- a) Praziquantel
- b) Ivermectin
- c) Chloroquine
- d) Mebendazole

20. The mechanism of action of ivermectin: -

- a) Inhibition of DNA synthesis
- b) Increasing chloride ion permeability
- c) Blocking protein synthesis
- d) Inhibiting microtubule polymerization

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**SECTION II: SHORT ANSWER QUESTIONS**

**(30 MARKS)**

1. Explain the following terms.
  - a) Therapeutic index. (2 marks)
  - b) Therapeutic efficacy. (2 marks)
2. Discuss Doxycycline under the following sub-headings.
  - a) Classification. (1 mark)
  - b) Mechanism of action (2 marks)
  - c) State two (2) indication (2 marks)
3. State five (5) major sources of drugs. (5marks)
4. Outline five (5) phases of drug development. (5marks)
5. Explain five (5) ideal qualities of a good antimicrobial. (5 marks)
6. Explain three (3) therapeutic applications of opioids. (6 marks)

**SECTION III: LONG ANSWER QUESTIONS**

**(20MARKS)**

1. Discuss Cephalosporins under the following sub-headings.
  - a) Classification giving examples in each class. (5 marks)
  - b) Mechanism of action. (3 marks)
  - c) State two (2) indication. (2 marks)
2. Explain five (5) Nursing responsibilities in drug administration. (10 marks).