



W1-2-60-1-6
JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

UNIVERSITY EXAMINATION 2016/2017

BACHELOR OF PHARMACY

FOURTH YEAR, SECOND SEMESTER EXAMINATION

PHA 2404B: PHARMACEUTICAL CHEMISTRY IV B

DATE: MAY 2017

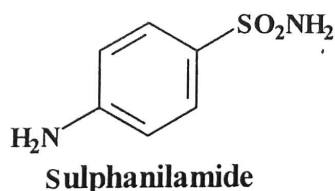
TIME: THREE HOURS

INSTRUCTIONS: ANSWER ALL QUESTIONS IN SECTION A (60 MARKS) AND ANY TWO QUESTIONS FROM SECTION B (40 MARKS).

ILLUSTRATE YOUR ANSWERS WITH DIAGRAMS/ STRUCTURES WHERE APPROPRIATE.

SECTION A: EACH QUESTION CARRIES 5 MARKS.

1. Describe the synthetic steps, reagents and intermediates of sulphanilamide synthesis from benzene (5 marks).

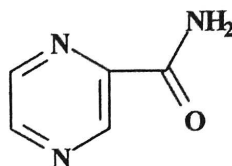


2. Enumerate the challenges of antimycobacterial therapy (5 marks).
3. Complete the table below (5 marks).

Compound	Chemical nature	Source	Mechanism of action
Mupirocin			
Bacitracin			

4. Explain the therapeutic role of cytokine inhibitors in management of gout giving specific drug examples (5 marks).

5. Outline the structure activity relationships of antileprotic sulphones and give appropriate examples (5 marks).
6. State the classes and drug examples of antiprotozoal agents used in management of amoebiasis (5 marks).
7. Discuss the resistance of *Plasmodium falciparum* to chloroquin (5 marks).
8. Describe the mechanism of action of drugs used in malaria prophylaxis (5 marks).
9. Account for the toxic effects observed when primaquine is administered to some patients (5 marks).
10. Describe the metabolism of pyrazinamide. (5 marks).

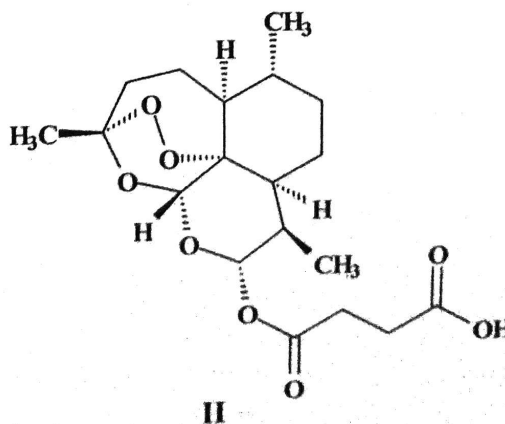
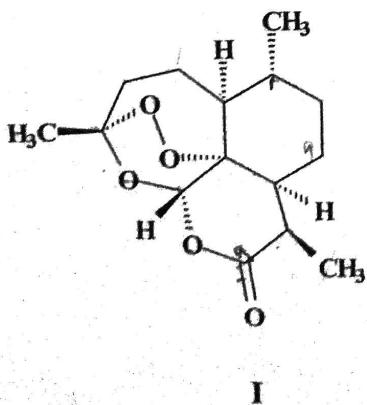


Pyrazinamide

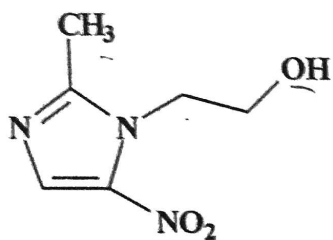
11. a) Discuss the origin of crysotherapy; name one example of a drug (2 marks).
- b) Outline two structural features that confer antirheumatic activity to gold salts (3 marks).
12. Using drug examples, describe therapeutic approaches to treatment of gout (5 marks).

SECTION B:

13. a) Discuss the physicochemical characteristics of artemesinine which reduce its pharmaceutical value (8 marks).
- b) Describe the structural activity relationships for artemesinine derivatives (6 marks).
- c) Describe the steps, reagents and intermediates in the conversion of compound I to II (6 marks).



14. a) Discuss how physicochemical properties of sulphonamides have been manipulated to get agents with better therapeutic profiles (10 marks).
- b) Explain the link between the mechanism of action and resistance to isoniazid effectiveness (10 marks).
15. a) Describe the radical mediated action of metronidazole (10 marks).
- b) Describe the steps, reagents and intermediates of metronidazole synthesis from diethylamine (9 marks).



Metronidazole

- c) State three drugs that have same mechanism as metronidazole (1 mark).

END