

FEDERAL UNIVERSITY OF TECHNOLOGY OWERRI
SCHOOL OF BIOLOGICAL SCIENCES, DEPARTMENT OF MICROBIOLOGY
RAIN SEMESTER 2017/2018 SESSION EXAMINATION
COURSE CODE/TITLE: MCB 302/PHARMACEUTICAL MICROBIOLOGY

DATE: 01/09/18; TIME: 2PM

INSTRUCTIONS: ANSWER ANY FOUR QUESTIONS; TIME ALLOWED: 2^{1/2}HOURS

- 1a) Write short notes on the following mechanisms of acquiring resistance by bacteria:
- Drug-inactivating enzymes
 - Alteration in the target molecule
 - Decreased uptake of the drug
 - Increased efflux pump action
- 2a) What is a chemotherapeutic agent?
b) What factors influence the effectiveness of chemotherapeutic agents?
c) Describe how a chemotherapeutic agent would interfere with the cell wall synthesis of a given gram positive bacteria
- 3a) What is antibiotic resistance?
b) What is a medicinal plant?
c) Discuss extraction of antimicrobial substances from plants under the following: (i) maceration (ii) infusion (iii) decoction (iv) digestion
- 4a) State the roles of the following scientists in the discovery and development of antimicrobial drugs: (i) Paul Ehrlich (ii) Alexander Fleming (iii) Gerhard Domagk
b) How is the toxicity of a drug expressed?
c) Discuss the following important properties of antimicrobial drugs that physicians must consider when prescribing a appropriate medication: (i) Antimicrobial action (ii) Spectrum of activity (iii) Selective toxicity (iv) Tissue distribution, metabolism and excretion of the drug
- 5a) What are the effects of combinations of antimicrobial drugs?
b) Discuss the characteristics of host-drug reactions under the following headings:
(i) Toxic effects (ii) Allergic reactions (iii) Suppression of the normal flora
- 6a) Discuss the ways emergence of antibiotic resistance can be reduced and controlled