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FACULTY OF SCIENCE  
DEPARTMENT OF MICROBIOLOGY  
2016/2017 RAIN EXAMINATION

COURSE: BASIC TECHNIQUES IN MICROBIOLOGY  
COURSE CODE: MCB 206

DURATION: 1 HOUR: 30 MINS

INSTRUCTION: Answer ONE question from each section

SECTION A

- 1a. Differentiate between Synthetic media and Non-synthetic media  
b. Define the following terms:  
(i) Selective media (ii) Differential media (iii) Enrichment media (iv) All-purpose media  
c. List three precautions that are necessary in the Laboratory preparations of culture media.

2a. Write briefly on the following terms:

- (i) Pure culture (ii) Anaerobic chamber (iii) Lyophilization  
b. Outline the procedure for the isolation of bacterial isolates by Streak Plate technique. List two precautions you will take in such procedure.

SECTION B

- 3a. With adequate examples, explain what you understand by Primary stain and Counter stain.  
b. Distinguish between basic and acidic stains. Highlight on their significances.  
c. Explain the step-by-step procedure for Gram staining technique.

4a. Briefly explain the term Standard plate Count. Describe the step-by-step procedure for this microbiological technique. State its limitation.

- b. In a given standard plate count procedure, 0.1 ml of an appropriate dilution of  $10^{-3}$  was used as inoculum. After incubation period, 65 colonies were counted. What is the original cell density of the concentrated sample?  
c. What do you understand by Urine culture? Write short note on its application.

SECTION C

5. Explain the principles, procedures and probable results of the following biochemical tests:

- (i) Coagulase (ii) Catalase (iii) Indole (iv) Oxidase  
6. Write extensively on cellular and colonial identification of microorganisms.

Culture

SYNOPSIS