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FACULTY OF SCIENCE
DEPARTMENT OF MICROBIOLOGY
2014/2015 RAIN EXAMINATIONS

COURSE: BASIC TECHNIQUES IN MICROBIOLOGY

COURSE CODE: MCB 206

DURATION: 1 1/2 HOUR

INSTRUCTION: Answer one question from each section

SECTION A

- 1a. What is a pure culture?
 - b. Highlight ten microbiological instruments and state their functions
 - c. After at least 24 h of incubation, do prepared plates and broths appear to be sterile? Explain your answer.
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- 2a. What is a microbiological medium?
 - b. Distinguish between solid and liquid medium and give two examples each
 - c. Describe the procedure of sterilizing culture media

SECTION B

- 3a. Define the following terms (i) Stain (ii) Chromogen (iii) Chromophore
 - b. Distinguish between Simple stains and Negative stains. Highlight on their microbiological significances. *Application*
 - c. Describe the procedure for Gram staining technique.
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- 4a. Distinguish between Viable count and Direct count.
 - b. Describe in details how you would use Petroff-Hauser method to estimate cell density of bacterial suspension
 - c. Two hundred (200) cells from a bacterial suspension with a dilution factor of 10^{-3} were counted in 16 squares. Given that the volume above a single small square is 5×10^{-4} mL. Calculate the cell density in the original sample.

SECTION C

- 5 a. What is colonial morphology?
 - b. Describe the characteristic features of colonies on solid agar media.
 - c. List four (4) reasons for microbial fixation
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- 6 Describe the step by step procedure involve in the following Biochemical tests:
(a) Coagulase (b) Catalase (c) Oxidase (d) Methyl red