

**FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI**  
**SCHOOL OF PHYSICAL SCIENCES**  
**DEPARTMENT OF SCIENCE LABORATORY TECHNOLOGY**

**RAIN SEMESTER EXAMINATION FOR 2014/2015 SESSION**  
**STM 516: DIAGNOSTIC AND FORENSIC MICROBIOLOGY      TIME:3HRS**

**INSTRUCTION: ANSWER ALL QUESTIONS IN SECTION A AND FOUR QUESTIONS ONLY IN SECTION B**

**SECTION A:**

1. List the common methods of isolation of pure culture (3mks)
2. At what temperature do agar solidify? (1mk)
3. Describe the serial dilution method (5mks)
4. What are the three categories of media that enable macroscopic study of bacteria (3mks)
5. List 5 major tasks of the microbiology laboratory (5mks)
6. List 3 pathogens and commensals present in urine specimen (3mks)

**SECTION B:**

- 1a. Describe the general view on the parameters used in the process of identification of microorganisms (10mks)
- b. Discuss the step by step method of Gram-staining technique (10mks)
- 2a. What are the general requirements for collecting and submitting specimens (10mks)
- b. Write short notes on the following terms: (i) enriched media (ii) selective media (iii) Differential media (iv) General purpose media (10mks)
- 3a. Elaborate on the etiological diagnosis of bacterial urinary tract infections stating the aim of the test, types of specimen, pathogens and commensals etc. (15mks)
- b. Discuss the culturing procedure of a urine sample (5mks)
- 4a. Write short notes on the following: (i) Streak plate method (ii) spread plate method (iii) Pour plate method (15mks)
- b. Explain the ways one can demonstrate the proof of purity of cultures (5mks)
- 5a. Discuss the four tests used for differentiation of the various members of enterobacteriaceae family (15mks)
- b. List 5 characteristics features of colonies on solid agar media that can be noted during identification of microorganisms (5mks)
- 6a. Elaborate on the diagnosis of bacterial conjunctivitis with emphasis on types of specimen, pathogen and commensals, media for cultivation and time relapse before processing sample (15mks)
- b. Define forensic microbiology and examples of its application (5mks)