FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI.
SCHOOL OF PHYSICAL SCIENCE
DEPARTMENT OF SCIENCE LABORATORY TECHNOLOGY
HARMATTAN SEMESTER EXAMINATION 2013/2014 SESSION
STM 301 : BACTERIOLOGY
INSTRUCTION: ANSWER ANY FIVE (5) QUESTIONS
TIME ALLOWED: 3 HOURS

1 (a) Write an essay on normal flora
(b) Discuss mechanisms of specific immune response

2. (a) Discuss the laboratory diagnosis of *B. anthracis* from
(i) Clinical samples
(ii) Environmental samples
(b) Discuss control of *B. anthracis* infection
(c) List the diseases caused by *Streptococcus pyogenes*

3. (a) (i) State the importance of Bergey's manual in microbiology
(ii) List five (5) cultural characteristics that assist in bacteria identification
(iii) Describe the four (4) divisions by which bacteria could be classified
(b) Write short notes on
(i) Low temperature preservation of pure cultures
(ii) DNA sequencing in as a tool used for bacterial classification

4. (a) State at least three (3) conditions that may lead to optimum recovery of bacteria from urine sample
(b) (i) Why are microorganisms stained?
(ii) Differentiate between positive staining and negative staining
(iii) Name the important stain(s) employed in Gram staining, Endospore staining and Zeihl-Neelsen staining
(c) (i) Explain the importance of subculturing in microbiology
(ii) Briefly explain what you understood by this phrase 'Isolation, purification and identification of bacteria'

5. Describe the epidemiology, pathogenesis, control and treatment of any two (2) of the following
(a) Bacillary dysentery
(b) Enteric fever
(c) Bubonic plaque

6. (a) Write an essay on Koch's postulates
(b) Highlight the challenges associated with these postulates
(c) Despite the absence of cell wall, the Mycoplasmas are still osmotically stable. Briefly comment

7. (a) Draw and label the diagram of typical bacterial cell
(b) What are the functions and chemical compositions of the following components of bacterial
(i) Cell wall (ii) Outer membrane (iii) Capsule (iv) Cell membrane