CRAWFORD UNIVERSITY

FAITH CITY, IGBESA, OGUN STATE

2015/2016 HARMATTAN SEMESTER EXAMINATIONS
COLLEGE: NATURAL AND APPLIED SCIENCES
DEPARTMENT: BIOLOGICAL SCIENCES
PROGRAMME: MICROBIOLOGY
COURSE CODE: MCB 313
COURSE TITLE: VIROLOGY AND TISSUE CULTURE
COURSE UNIT: 2 **TIMES: $2^{1}/_{2}$HOURS**
INSTRUCTIONS: ANSWER QUESTION ONE (1) AND ANY OTHER THREE (3) QUESTIONS

1. (a) Antigen-Antibody reactions are neutralization reactions. Explain. (5 Marks)
   (b) Give 4 specific examples of antigen-antibody neutralization reactions explaining one in detail and the principle behind it. (10 Marks)
   (c) Explain cytopathic effect within the context of cellular viral infection. (5 Marks)
   (d) A rise in antibody titer is significant as a disease condition progresses. Why? (4 Marks)

2. (a) Viruses are microscopic, obligate intracellular parasite but these features are not truly distinctive feature of viruses. Discuss. (8 Marks)
   (b) Draw and label a T_4 bacteriophage (4 Marks)

3. (a) List and explain the methods of culturing viruses in the laboratory. (6 Marks)
   (b)Write short notes on the following :
   i. Primary Cell Line (3 Marks)
   ii. Diploid Cell Line (3 Marks)

4. (a) Bacteriophages can multiply by 2 alternative mechanisms.
   i. List these 2 mechanisms. (2 Marks)
   ii. Write a comprehensive note on the steps involved in viral replication. (6 Marks)
   iii. Write a short note on PFU. (4 Marks)

5. (a) Write a concise note on Western Blotting Technique. (6 Marks)
   (b) Make a diagrammatic representation of the following giving an example of each:
   i. Naked Icosahedral virus (2 Marks)
   ii. Envelopoed Icosahedral Virus (2 Marks)
   iii. Naked Helical Virus (2 Marks)

6. (a) Write a detailed comprehensive note on application of in-vivo cell culture Techniques? (8 Marks)
   (b) What is Seroconversion? (4 Marks)