OLABISI ONABANJO UNIVERSITY
FACULTY OF SCIENCE
DEPARTMENT OF MICROBIOLOGY
2017/2018 HARMATTAN SEMESTER EXAMINATION

COURSE: PATHOGENIC BACTERIOLOGY **CODE: MCB 311**

INSTRUCTION: ATTEMPT ANY FOUR **TIME: 2HOURS**

1a. Describe a named staining technique you will perform to detect the presence of *Mycobacterium tuberculosis* in the sputum samples that was brought to your laboratory for analysis.

b. Highlight the criteria for rejection of specimens.

2a. With the aid of a well labelled diagram **ONLY**, explain the complete cycle of Koch's Postulates.

b. Write on the general rules for the collection and transportation of specimen.

3a. A gastrointestinal illness caused by eating foods contaminated with toxins produced by a Gram positive cluster-like organism that is catalase and coagulase positive was isolated in your laboratory. Provide a detailed account on how you would diagnose this organism as a Microbiologist.

b. Mention and explain bacterial virulence factors.

4a. What are Koch's postulates and how do they influence the development of microbiology?

b. Why are Koch's postulates still relevant today?

c. Explain briefly the concept of host-parasite relationship using specific examples.

5a. A man attended the special clinic of Olabisi Onabanjo University with the history of three painless sores the right thigh. He gave a history of a casual sexual encounter with a woman at a night party organized by NAMS in honour of their graduating students. On examination, three crusted sores on the right thigh and the scars of a freshly healed lesion at the base of his penis was observed. Laboratory investigation revealed the etiological agent of the infection as an intracellular parasite.

i. State the possible causative agent of this infection
ii. Mention four ways of diagnosing this infection and briefly explain one in detail
iii. Why is this organism regarded to as obligate intracellular parasite?
iv. State three subspecies of this organisms.

b. Mention five reasons why *Neisseria gonorrhoeae* can easily evade the immune system.