ESSAY QUESTIONS (80 marks)

Answer four (4) only of the following seven (7) questions. (20 marks each).

1.   Discuss   the   pathogenesis   of   Neisseria   infections   in   the   genital   tract.   What molecular  mechanisms  are  known  to  contribute  to  the  differences  in  how  the disease  manifests  in  males  and  females?  Include  examples  of  at  least  three  (3) virulence factors and describe the role they play in the induction of inflammation and evasion of the host immune response.

 2.   Discuss the causes of non-gonococcal urethritis (NGU). Describe the pathogenesis of  urethritis,  and  give  three  (3)  examples  of  pathogens  that  cause  NGU  and  how they are diagnosed.

4.   Antibiotic resistance due to b- lactamase production is a major problem in clinical microbiology  worldwide.  Discuss  the  known  different  types  of  b-  lactamase enzymes  and  the  groups  of  organisms  that  secrete  them.  Give  at  least  three  (3)

5.   Discuss the diagnosis and treatment of bloodstream infections. How can the cause of  an  infection  without  an  obvious  focus  be  identified?  How  can  the  presence  of bacteria  in  the  blood  or  peritoneum  lead  to  multi-organ  failure?  Describe  the immunological mechanisms involved.

7.   Discuss the characteristics of mycoplasmas that permit them to cause disease at different sites in the body. Give at least three (3) examples of disease caused by mycoplasma and ureaplasma. Discuss the hypothesis that genital mycoplasmas can be an independent cause of disease