

MAULANA AZAD COLLEGE
DEPARTMENT OF BOTANY
BOTANY – HONOURS
PAPER : CC-1
MICROBIOLOGY
QUESTION BANK

1. Answer the following questions:

x2

- a) What are plasmids? How do they differ from episomes?
- b) What is an actinobacteria?
- c) What is 'sexduction'?
- d) What is glycocalyx?
- e) Where is pseudomurein found?
- f) What is a F' factor?
- g) Name one endospore former bacterium.
- h) What are 'porins'?
- i) What are firmicutes?
- j) Give one example each of a Gram positive and Gram negative bacterium
- k) Give an example of a lytic phage
- l) Name the proteins that constitute the flagella and pilli
- m) What is a Hfr strain?
- n) What is generation time?
- o) Name one chemical used for artificial transformation
- p) What are Mollicutes?

2. Discuss in brief/Write short notes on :

x5

- a) Distinguish between Archae and Bacteria
- b) The ultrastructure, formation and function of an endospore
- c) Mention the important characteristic features of the group Spirochaete
- d) What is meant by generation time? What happens in different phases of bacterial growth?
- e) Distinguish between glycocalyx and capsule
- f) The process of 'Sexduction'
- g) Describe the ultrastructure of bacterial flagella.
- h) Transmission and translocation of plant viruses

3. Answer the following questions:

- a) Describe the process of 'specialised transduction'. How does it differ from generalised transduction? (7+3)
- b) Mention the differences in the chemical composition of the cell wall of Gram positive and Gram negative bacteria. (10)

- c)** Give an account of the structural features of TMV. Describe the one step growth curve of virus. (5+5)
- d)** What is competence? Differentiate between natural and induced competence in bacteria. Describe the mechanism of natural transformation (1+4+5)
- e)** Write with reasons the possible donor and recipient status of cells taking part in a) $F^+ \times F^-$
b) $Hfr \times F^-$ and c) $F' \times F^-$ crosses during mating. (2+4+4)
- f)** Discuss briefly the molecular events taking place during the lysogenic cycle. (10)