

# RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College under University of Calcutta)

B.A./B.Sc. FIFTH SEMESTER EXAMINATION, SEPTEMBER 2014

THIRD YEAR

MICROBIOLOGY (Honours)

Paper : V

Date : 15/09/2014

Time : 2 pm – 4 pm

Full Marks : 50

1. a) What is a mobilizable plasmid? Cite an example. (2)  
b) How can a *E. coli* dna A (Ts) mutant replicate even if the temperature is raised to 42°C? (2)  
c) What is satellite DNA? (2)  
d) State the structural and functional peculiarities of telomerase? (2)
2. a) How can you prove that RNA is the genetic material? (3)  
b) How is the linking number related to twist and writhing number? Explain with suitable example. (2)  
c) What is an ARS? (2)
3. a) Why screening is necessary for the industrially important strains of micro-organisms? (2)  
b) What are the major differences between primary and secondary metabolites? (2)  
c) What is the basis of preservation of micro-organisms by lyophilisation? What are the advantages and limitations of this method of preservation? (2 + 2)  
d) Why antibiotic is called secondary metabolite? (2)
4. a) What is antibiotic associated colitis? (2)  
b) Write down the role of streptococci in dental caries. (2)  
c) Coagulase acts as invasins – explain. (3)
5. a) A foreign infectious particle in our body evades phagocytosis. Can it be considered an Immunogen? (2)  
b) When can haptens be considered an Immunogen? (2)  
c) Bence – Jones protein cannot be crystallized in vitro - state True or False. (2)  
d) Can the tetrapeptide portion NAM/NAMA residues of bacterial peptidoglycan be considered an Immunogen? (2)
6. a) What do you mean by MOI? (1)  
b) Lipids of the phage always determined by the host. Justify the statement. (2)  
c) Define Burst size and eclipse period. (2)  
d) How viruses can be classified by their symmetry? (2)  
e) Write short notes on (any two) (3)
  - i) Cyclic permutation
  - ii) Terminal Redundancy
  - iii) Phage typing.

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