

( 3 (Sem-5) BOT M 1

2014

BOTANY

( Major )

Paper : 5.1

( Microbiology and Immunology )

Full Marks : 60

Time : 3 hours

*The figures in the margin indicate full marks  
for the questions*

1. Answer the following as directed :  $1 \times 7 = 7$
- (a) Which ribosomal RNA is extensively used for microbial taxonomy?
  - (b) Bacterial growth is synonymous to ——. (Fill in the blank)
  - (c) Name the microbiologist who crystalized tobacco mosaic virus for the first time.
  - (d) — plasmid is used for biological gene transfer in genetic engineering. (Fill in the blank)
  - (e) Give an example of magnetotactic bacteria.

A15—1000/259

( Turn Over )

- (f) Which type of antibody is present in mother's milk?
- (g) Which of the following organisms is termed as 'energy parasite'?
- (i) Mycoplasma
  - (ii) Rickettsiae
  - (iii) Chlamydiae
  - (iv) Z-form bacteria

2. Define the following giving suitable examples : 2×4=8

- (a) Archaeobacteria
- (b) Prions
- (c) Actinomycetes
- (d) Interferons

3. Answer any *three* of the following questions : 5×3=15

- (a) What are plasmids? Describe the role of different types of plasmid.
- (b) Define germ theory of disease. In what way did Koch's postulates influence the development of microbiology?
- (c) Describe the molecular trends for bacterial taxonomy.
- (d) Write a note on aerobiology.

4. Answer the following questions : 10×3=30

- (a) Discuss the role played by micro-organisms in maintaining the carbon cycle in nature.

Or

What is generation time? Draw a typical bacterial growth curve and describe the events take place in each phase.

- (b) Discuss the various views with regard to the nature of viruses. Describe the recent outlines of viral classification.

Or

"Transduction is a vector mediate parasexuality." Explain the statement. Describe the process of generalized and specialized transduction in bacteria.

- (c) Define specific resistance. Describe in detail the clonal selection theory for mechanism of antibody formation.

Or

What is potable water? How is potability of water determined?

\*\*\*