(c) General properties and characteristics of Plasmids. 5

(d) Multiplication cycle of ass RNA Virus ? 5

OR

(p) What are retroviruses ? How do they multiply ? 5

(q) What are bacteriophages ? 5

(r) Classification of Transposons on the basis of their mechanism of transposition. 5

(s) Describe Neurospora as genetic model. 5

AQ – 857

First Semester M. Sc. Examination

BIOTECHNOLOGY

Paper – III (1 BTB – 3)

Microbes : Physiology and Genetics

P. Pages : 4

Time : Three Hours] [Max. Marks : 100

Note : (1) All questions are compulsory and carry equal marks.
(2) Draw suitable diagrams wherever necessary.

1. Attempt the following :—

(a) Beneficial uses of Viruses. 5

(b) The ecological importance of Protozoa. 5

(c) Cyanobacteria are important in the nitrogen cycle. 5

(d) Complex tumor viruses. 5

OR

(p) Enlist five examples (each) of Plant Virus and Animal Virus. 5

(q) Significance of Archaea in technology and industry. 5

(r) Role of Algae in pollution control. 5

(s) Describe the morphology and characteristics of Mycobacteria. 5

2. Write an essay on various methods of bacterial culture preservation techniques.

OR

Explain the following methods used to isolate Bacteria in pure culture :—

(1) Streak plate,

(2) Spread plate and

(3) Micro–manipulator. 20

3. Attempt the fallowing :—

(a) Biology and technologies of photosynthetic microorganism. 5

(b) Role of nitrate and sulfate oxidizing bacteria in microbial corrosion. 5

(c) Different steps of the Calvin–cycle in photosynthesis. 5

(d) Energy conservation in Acetogenic bacteria. 5

OR

(p) Basic Elements of Microbial Nutrition, ecology and growth. 5

(q) Physical, chemical and biological function of carotenoids. 5

(r) General features of nitrate–oxidizing bacteria. 5

(s) Describe the Energetics of chemolithotrophy. 5

4. What is meant by opportunistic fungal infections in immunocompromised host with special reference to secondary infection in cancer patients ?

OR

What is meant by multi drug resistance ? Describe the problems, molecular genetics of specific mechanism of antibiotic resistance and its control strategy. 20

5. Attempt the following :—

(a) Yeast as model genetic organism. 5

(b) Bacterial genetic map with reference to E. coli. 5