

2017

Time : 3 hours

Full Marks : 80

Candidates are required to give their answers in
their own words as far as practicable.

The figures in the margin indicate full marks.

Answer five questions in which

Q. No. 1 is compulsory.

1. Choose the correct answer of the following :

1×16 = 16

(a) Which of the following is a genetic vector ?

- (i) Plasmid
- (ii) Phage
- (iii) Cosmid
- (iv) All of these

(b) Plasmids occur in

- (i) Viruses
- (ii) Chromosomes
- (iii) Bacteria
- (iv) Chloroplasts

(c) Virus was first time crystallised by

- (i) Stanley
- (ii) Rous
- (iii) Sumner
- (iv) Iwanovski

(d) In bacteria, genes for antibiotic resistance are usually located in

- (i) Plasmids
- (ii) Cytoplasm
- (iii) Mitochondria
- (iv) Nucleus

(e) The molecular weight of IgG is

- (i) 150000
- (ii) 320000

(iii) 300000

(iv) 185000

(f) The mycelial bacterium is :

(i) Rhizobium

(ii) Actinomyces

(iii) Treponema

(iv) Spirillum

(g) Which of the following is not a water borne disease ?

(i) Cholera

(ii) Asthnia

(iii) Typhoid

(iv) Amoebic dysentery

(h) The hydrogen donor in bacterial photosynthesis is :

(i) H_2O

(ii) H_2S

(iii) H_2SO_4

(iv) NH_3

(i) Bacterium responsible for fermentation of dairy milk is :

(i) Hay bacillus

(ii) Lactobacillus

(iii) Acetobacter

(iv) Rhizobium

(j) Cheeses are usually classified on the basis of :

(i) Texture

(ii) Flavour

(iii) Colour

(iv) All of these

(k) Preserving germ plasm in frozen state is :

(i) Vernalization

(ii) Cold storage

(iii) In situ preservation

(iv) Cryopreservation

(l) Recombinant DNA is achieved by cleaving the pro-DNAs by .

- (i) Primase
- (ii) Exonucleases
- (iii) Ligase
- (iv) Restriction endonuclease

(m) The electron gun of electron microscope is located .

- (i) At the base
- (ii) At the top
- (iii) On the stage
- (iv) On the lenses

(n) The resolving power of electron microscope is :

- (i) 1000 \AA°
- (ii) 100 \AA°
- (iii) 1 \AA°
- (iv) 10 \AA°

(o) The angstrom unit is equal to :

- (i) 10^{-10} m

(ii) 10^{-9} m

(iii) 10^{-6} m

(iv) 10^{-3} m

(p) Vaccination against small pox was first introduced by :

- (i) Robert Koch
- (ii) Louis Pasteur
- (iii) Edward Jenner
- (iv) John Tyndall

2. Write the scientific contribution of three noble laureates of microbiology 16

3. Compare the principle methods of operation and utilities of SEM and TEM. 16

4. Write short notes on any two of the following

2×8 = 16

(a) PPLD

(b) Interferon

(c) Radioimmunoassay

(d) Microbial growth

5. Define 'extremophile'. Write chief characteristics of thermophiles, alkalophiles and psychrophiles. 16
6. What is genetic recombination? Describe the mechanism of generalised and specialised transduction process in bacteria. 16
7. Define biofertilizer. Write the name of some commercially available N_2 fixing microbes and their significance. 16
8. Describe, in brief, strain improvement of microbe by enhancement and recombinant DNA methods. 16
9. What is antigen? Describe, in detail, cell-mediated immune system of defence. 16

