XC-124

T.Y.B.Sc.

March-2013

Microbiology : Paper – IX

(Microbial Technology)

Time : 3 Hours] **[Max. Marks : 70**

Instruction : Figures on right indicate marks.

1. (a) Answer the following (any **two**) ; **12**
   (i) Describe restriction endonucleases as a tool for rDNA technology.
   (ii) Enlist the methods available for selection cloned cells and describe use of DNA probe.
   (iii) Describe T_i plasmid.
   (iv) Describe making of cDNA.
   (b) Answer very briefly : **02**
   (i) What is the function of terminal transferase ?
   (ii) What is pribnow box ?

2. (a) Describe the following (any **two**) : **12**
   (i) Animal cell lines
   (ii) Polymerase chain reaction
   (iii) UV-visible spectrophometer
   (iv) Gel electrophoresis
   (b) Answer in brief : **02**
   (i) Name the biomolecules which can be separated by blotting techniques.
   (ii) What is RIA and RAST ?

3. (a) Answer the following (any **two**) : **12**
   (i) Enlist the methods available for immobilization of enzyme and describe covalent bonding.
   (ii) Describe the mechanism of bioleaching and role of microorganisms in the same.
   (iii) Write a detailed note on biopesticides.
   (iv) Describe advantages and disadvantages of genetically modified plants.
   (b) Answer briefly : **02**
   (i) Name the microbes involved in MEOR.
   (ii) What is IPR ?

4. (a) Answer the following (any **two**) : **12**
   (i) What is blood ? Describe components of blood with their functions.
   (ii) Describe blood groups and their importance.
   (iii) What are serological methods ? Describe ELISA as diagnostic tool.
   (iv) Explain the use of microscopy in identification of a pathogen in clinical microbiology.

   (b) Answer briefly : **02**
   (i) Name the technique used to collect specimen/sample from cerebrospinal fluid.
   (ii) Name the hormone which triggers erythropoesis.

5. (a) Answer the following (any **two**) : **12**
   (i) What is sample ? Describe the methods for sampling in biostatistics.
   (ii) What is arithmetic and geometric mean ? Calculate Arithmetic mean for the following :
   Values of rate of reproduction of 50 fish is represented as

Class :	1 – 10	11 – 20	21 – 30	31 – 40	41 – 50	51 – 60
Frequency :	3	11	7	4	15	0

Class :	61 – 70	71 – 80
Frequency :	7	3

   Calculate AM for the same.
   (iii) Describe research areas of bioinformatics.
   (iv) Describe primary databases for nucleic acids.

   (b) Answer briefly : **02**
   (i) What is population in biostatistics ?
   (ii) Give examples of protein databases.

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