

Time: 3 hours

Marks: 100

Q1) A) Fill in the blanks choosing the correct options given in the bracket and rewrite the sentence:

(5 Marks)

- a) In the statistical term _____, the data divided in to two sides, in which one is greater and the other is smaller. (Mode, Median, Mean)
- b) _____ is the gram molecular weight of solute dissolved in one kilogram of solvent. (Normality, Molarity, Molality)
- c) _____ method of transgenesis is used to insert the DNA fragment into the embryonic stem cell.
(Cloning, DNA microinjection, Embryonic stem cell transplant)
- d) Insulin hormone is secreted by _____ of pancreas.
(β cells, δ cells, λ cells)
- e) _____ instrument is used to count the hydrogen ion concentration in the solution.
(Electrophoresis, pH meter, colorimeter)

B) Match the columns I and II and rewrite:

(5 Marks)

Column I**Column II**

- | | |
|-----------------------------|------------------------|
| a) Biohazards | i) Bar Diagram |
| b) Graphical representation | ii) DNA Fingerprinting |
| c) Celsius | iii) Pathogenic virus |
| d) RFLP | iv) Gene therapy |
| e) Cystic fibrosis | v) Temperature scale |

C) State whether true or false.

(5 Marks)

- a) Oxidising chemicals can destroy body tissue and metal parts.
- b) Mode value is always the middle value of the sample data.
- c) Deficiency of ADA enzyme causes Cystic fibrosis.
- d) PAGE electrophoresis method can be used to separate mixture of carbohydrate samples.
- e) Compound microscope can be used to magnify up to 10000X magnification.

D) Answer the following in one sentence:

(5 Marks)

1. Define Normality
2. Describe Mode
3. What is VNTRs ?
4. Describe chromatography
5. Describe Ultra centrifuge

Q2) A) Answer any one of the following:

(10 Marks)

A) Describe the uses of safety symbols and explain the following pictogram Irritants, flammable and Oxidising agent.

OR

A) Explain simple, subdivided and multiple bar diagrams with suitable example.

- Q2) B) Write note on any two from the following: (10 Marks)**
- a) Molarity
 - b) Scope of Biostatistics.
 - c) Pie diagram
 - d) Safe laboratory measures

- Q3) A) Answer any one of the following: (10 Marks)**
- A) Describe the method of DNA finger printing.

OR

- A) Give the achievements in of Biotechnology in the field of Aquaculture/ Animal Husbandry/ Medical.

- Q3) B) Write note on any two from the following: (10 Marks)**
- a) Ethical issues of transgenesis
 - b) Cloning
 - c) Describe the method of animal cloning
 - d) In-vivo Gene therapy

- Q4) Answer any two from the following: (20 Marks)**
- a) Describe the principle and application of centrifuge.
 - b) Explain the principle and application of Colorimeter.
 - c) What is pH? Give principle and application of pH meter.
 - d) Describe the components of a compound microscope.

- Q5) Write short notes on any Four. (20 Marks)**
- a) What are Biohazards
 - b) Characteristics of solution
 - c) Green Florescent Protein Gene
 - d) Method of Nuclear transplantation
 - e) Explain the applications of PAGE
 - f) Write Principle and application of spectroscopy
