

## Solutions for F.Y.B.Sc. Sem I Paper II

Paper Code- 64882

**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 Median .The data divided in to two sides, in which one is greater and the other is smaller.( Mode, Median, Mean)
- b) Molality is the gram molecular weight of solute dissolved in one kilogram of solvent (Normality, Molarity, Molality)
- c) DNA microinjection 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  $\beta$  cells of pancreas.  
( $\beta$  cells,  $\delta$  cells,  $\lambda$  cells)
- e) ) pH meter \_ 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	Answers
a) Biohazards	i) Pathogenic virus
b) Graphical representation	ii) Bar Diagram
c) Celsius	iii) Temperature scale
d) RFLP	iv) DNA Fingerprinting
e) Cystic fibrosis	v) Gene therapy

**C) State whether true or false. (5 Marks)**

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

**D) Answer the following in one sentence: (5 Marks)**

1. Define Normality- Definition of Normality.
2. Describe Mode –Describe what is mode.
3. What is VNTRs? – Variable number of Tandem Repeats and its uses.
4. Describe chromatography- Describe the principle of Chromatography.
5. Describe Ultra centrifuge- Describe the principle 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.

- Ans-** 1. Description about the safety symbols 2.5 marks  
2. Explanation about the symbols, for each symbol explanation 2.5 marks = 7.5 M

OR

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

- Ans.-** 1. Description about graphical representation- 2.5 marks  
2. For each explanation of a diagram 2.5 marks= 7.5 M

**Q2) B) Write note on any two from the following: (10 Marks)**

a) Molarity

**Ans-** 1. Definition- 2 M

2. Explanation, uses and examples 8M

b) Scope of Biostatistics.

**Ans-** 1. Description about the scopes and uses- 10 M

c) Pie diagram

**Ans-** 1. Description about the diagrammatic representation its use- 3 M

2. Explanation about Pie diagram- 2 M

3. Construction of Pie diagram- 3 M

4. Example and uses- 2 M

d) Safe laboratory measures

e) **Ans-** Description about at least 10 safe laboratory measures. 10 M

**Q3) A) Answer any one of the following: (10 Marks)**

A) Describe the method of DNA finger printing

**Ans-** 1. Explanation about the forensic science and history of DNA finger printing. 2M

2. Method of DNA finger printing. 5M

3. Uses DNA finger printing. 3M

OR

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

**Ans-** 1. Explanation and definition about Biotechnology- 2.5M

2. Achievements in of Biotechnology in each field. 2.5M (7.5M)

**Q3) B) Write note on any two from the following: (10 Marks)**

a) Ethical issues of transgenesis

**Ans-** Description about at least 6 ethical issues of transgenesis 5M

b) Cloning-

**Ans-** 1. What is Embryonic Cloning 1 M

2. Method and Uses of Embryonic Cloning 4M

c) Describe the method of animal cloning

**Ans-** 1. What is animal Cloning 1 M

2. History and method and uses of Animal cloning 4M

d) In-vivo Gene therapy

**Ans-** 1. What is Gene therapy- 1M

2. Method and uses in brief- 4M

**Q4) Answer any two from the following: (20 Marks)**

- a) Describe the principle and application of centrifuge  
**Ans-** 1. Principle of centrifugation- 3 M  
2. Description about the mechanism, types and uses of Centrifuge- 7M
- b) Explain the principle and application of Colorimeter  
**Ans-** 1. Principle of Colorimeter- 4 M  
2. Description about the mechanism and uses of Centrifuge- 6M
- c) What is pH? Give principle and application of pH meter.  
**Ans-** 1. Explanation and concept of pH- 3M  
2. Principle and application of pH meter- 7M
- d) Describe the components of a compound microscope.  
**Ans-** 1. Explanation about the microscopy - 3M  
2. Principle and application of compound microscope - 7M

**Q5) Write short notes on any Four. (20 Marks)**

- a) What is Biohazards  
**Ans-** Description, examples and precautions about biohazards- 5M
- b) Characteristics of solution  
**Ans-** Description about solution and its characteristics- 5 M
- c) Green Florescent Protein Gene  
**Ans-** 1. What is green florescent protein-1 M  
2. its occurrence and scientist who discovered it- 2 M  
3. Uses of Green Florescent Protein- 2M
- d) Method of Nuclear transplantation  
**Ans-** Explanation about of nuclear transplantation and its uses- 5M
- e) Explain the applications of PAGE  
**Ans-** 1. What is PAGE-1M  
2. Application of PAGE- 4M
- f) Write Principle and application of spectroscopy  
**Ans-** 1. Principle of Spectroscopy- 2M  
2. Application of Spectroscopy- 3M