

[Time: 2½Hours]

[ Marks:75]

Please check whether you have got the right question paper.

- N.B:
1. Attempt **all** questions.
  2. **All questions** carry **equal** marks.
  3. Draw **neat labelled diagrams** wherever necessary.
  4. **Use of non-programmable** calculator is **allowed**.

**Q.1 Do as directed: (any fifteen)****15**

- The functional unit of an enzyme is called as \_\_\_\_\_.  
a. Apoenzyme b. Holoenzyme c. Core-enzyme
- A plot of reciprocal of velocity versus the reciprocal of substrate concentration which yields a straight line is called as \_\_\_\_\_.  
a. Line Weaver Burk plot b. Haldane plot c. Ramachandran plot
- \_\_\_\_\_ is the non-protein part of the enzyme required for enzyme activity.  
a. Apoenzyme b. Holoenzyme c. Co-enzyme
- James Sumner first achieved the isolation and crystallization of the \_\_\_\_\_ enzyme.  
a. Urease b. Catalase c. Amylase
- Enzymes reduce the \_\_\_\_\_ energy to increase the rate of reaction.  
a. binding b. potential c. activation
- A low \_\_\_\_\_ indicates strong affinity between substrate and enzyme.  
a. Vmax b. Km c. [S]
- \_\_\_\_\_ enzymes have special sites other than active sites for modulators to bind.  
a. Extracellular b. Intracellular c. Allosteric
- Define Innate Immunity.
- Give the name of the antibody that crosses the placental barrier.
- Name any one primary lymphoid organ.
- The acronym HI stands for \_\_\_\_\_.
- One method of purification of monoclonal antibodies.
- Any one category of traditional vaccines.
- Compute Mean 11,12,13,14,15,16,17,18,19,20
- \_\_\_\_\_ is a positional average.
- Square of Standard Deviation is \_\_\_\_\_
- State True or False:- Histogram is a two dimensional graph.
- State True or False:- The figure obtained by joining vertical bars is known as frequency polygon.
- Define- Range.
- Give the formula to calculate Coefficient of Variance.

**Q.2 a. Enlist the salient features of active site of an enzyme.****8****b. Give an account of different classes of enzymes.****7****OR****1****TRUN OVER**

- c. Derive the relationship between substrate concentration and enzyme activity. **8**
- d. Give an account of different theories/models of enzyme-substrate complex formation. **7**
- Q.3** a. Differentiate Active and Passive Immunity. **8**
- b. Diagrammatically explain the structure of an antibody molecule. **7**

OR

- c. Discuss various classes of immunoglobulins. **8**
- d. Schematically explain the production of monoclonal antibodies. **7**
- Q.4** a. Define Biostatistics. Discuss the importance of Biostatistics in Biology. **8**
- b. Explain Median and Mode and also Compute Median and Mode for the following data **7**  
**15, 16, 17, 18, 19, 20, 33, 12, 56, 14, 14, 11, 14, 14, 16, 17, 18, 19, 30, 34, 35, 34, 14, 25.**

OR

- c. Compute Standard Deviation for the respiratory rate in 10 cases as follows **8**  
**23, 22, 20, 24, 16, 17, 18, 19, 21, 20.**
- d. Explain representation of data using Bar graph, Pie charts and Histogram. **7**
- Q.5** Write short notes on **any three** of the following: **15**

- a. Reversible Enzyme Inhibition.
- b. Applications of enzymes.
- c. Any one technique of Agglutination.
- d. Variance.
- e. Data and its types.