



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions. (15x2=30)**

- I. Define acid number and how it determines the quality of an oil.
- II. Summarize some important functions of cholesterol in the body.
- III. Why do fats have thermal insulation properties?
- IV. How rancidity occurs in fats?
- V. Why glycine is not optically active?
- VI. Elaborate peptide bond formation by giving the equation.
- VII. Name any four techniques that may be employed to separate proteins.
- VIII. What is an isoelectric point?
- IX. Write a short note on the isoenzyme.
- X. Discuss the effect of pH change on enzyme activity.
- XI. Define the Michaelis-Menton constant ( $k_m$ ).
- XII. Differentiate competitive and non-competitive inhibition in enzymes.
- XIII. Justify that the respiratory quotient of carbohydrates is 1.
- XIV. Define fiber (in nutrition) and give its dietary sources.
- XV. Briefly discuss RDA(recommended dietary allowance).

**Answer the following questions.**

- Q.2. (a) Give in detail the biological importance of lipids. (5)**  
**(b) Discuss any five factors affecting BMR (basal metabolic rate). (5)**
- Q.3. (a) How amino acids are classified on the basis of their polarity? (5)**  
**(b) Discuss the  $\alpha$ -helix structure of proteins in detail. (5)**
- Q.4. (a) Give a description of six major classes of enzymes in sequence. (6)**  
**(b) Explain the salient features of an active site of enzymes. (4)**