

**Question 1 Write the following**

(i) Define: Enzymes. Explain its specificity of enzyme and its types. (5 Marks)  
(ii) Write a short note on active transport of molecules across the membrane. (5 Marks)

**OR**

(i) What are various functions of coenzyme and cofactors. Give an example. (5 Marks)  
(ii) Explain passive diffusion and facilitated diffusion with an example. (5 Marks)

**Question 2 Write the following**

(i) Explain steps of TCA cycle and its role in energy generation. (5 Marks)  
(ii) Write a short note on fatty acid oxidation pathway of lipid metabolism. (5 Marks)

**OR**

(i) Explain types, compositions and role of lipoproteins. (5 Marks)  
(ii) Explain urea cycle and its importance in metabolism. (5 Marks)

**Question 3 Attempt any five out of six**

(5 Marks)

(i) What are properties and composition of an active site of an enzyme?  
(ii) What are the components of pyruvate dehydrogenase complex?  
(iii) What are the fates of pyruvate in metabolic pathways?  
(iv) What is futile cycle? Explain its role.  
(v) What is ketoacidosis?  
(vi) Explain amino acid deamination reaction.