

B. E. FTBE 2nd Year 2nd Semester Examination 2024
Biochemistry and Nutrition -II

Time : Three hours

Full Marks : 100

Answer any ten questions

10x10=100

1.
 - a. What is meant by enzyme specificity?
 - b. Mention any two factors that affect RDA.
 - c. What is exon?
 - d. Give the structure of deoxyribose. (2+2+3+3)

2.
 - a. What do you understand by origin of replication?
 - b. What are allosteric modulators?
 - c. Mention any two functions of calcium .
 - d. What is geriatric nutrition? (2+3+2+3)

3.
 - a. Where in cell, transcription occurs?
 - b. Mention the four stages of protein synthesis.
 - c. Distinguish between DNA and RNA (2+4+4)

4.
 - a. What are codons?
 - b. What is metalloenzyme?
 - c. Give the structures of three compounds those collectively represent vitamin B₆. (2+2+6)

5.
 - a. What do you understand by sense strand?
 - b. How much intake of free sugar is permitted in a healthy diet?
 - c. Explain the effect of temperature on enzyme activity.
 - d. Name any two vitamins and their corresponding coenzyme forms. (2+2+4+2)

6.
 - a. In DNA how the two strands of double helix are held together?
 - b. What is the advantage of unsaturated fat in diet?
 - c. What are the significances of K_m ? (3+3+4)

7.
 - a. Explain how presence of competitive inhibitors affects K_m and V_{max} .
 - b. Presence of excess carbohydrate in diet increases thiamine requirement-justify. ([3+3] +4)

8.
 - a. Instead of avoiding carbohydrate, consumption of complex carbohydrate is recommended - justify.
 - b. What is double reciprocal plot?
 - c. DNA double helix is antiparallel. Explain. (4+3+3)

9.
 - a. What are the steps of RNA processing?
 - b. THF is actively involved in one carbon metabolism. Justify.
 - c. What do you understand by specific acid catalysis? (3+4+3)

10.
 - a. Why DNA replication is called semiconservative?
 - b. What is the role of SSBP in replication?
 - c. Any enzyme with lower K_m value is more easily saturated than the enzyme with higher K_m value. Explain. (3+3+4)

11.
 - a. Mention one FAD dependent enzymes of each of carbohydrate, lipid and protein metabolism.
 - b. Mention any two functions of vitamin A. (6+4)

12.
 - a. Write any two functions of vitamin C.
 - b. Write any two functions of iron.
 - c. What are dietary supplements? (4+4+2)