Ref. No. : Ex/FTBE/BS/B/T/221/2023

B.E. FOOD TECHNOLOGY AND BIO-CHEMICAL ENGINEERING SECOND YEAR SECOND SEMESTER - 2023

Subject: Biochemistry and Nutrition II **Time: 3hr** **Full Marks: 100**

Part I

1.Answer **any eight** questions 8x5=40

a. What is active site? Does a change in tertiary and quaternary structure of enzyme alter its catalytic activity? 3+2

b. Mention any five factors that affect enzyme activity. 5

c. DNA replication is semiconservative. Explain with diagram. 5

d. What is stop codon? What is its significance? 2+3

e. Discuss the objectives of meal planning. 5

f. Discuss how calcitriol regulates the plasma levels of calcium and phosphate. 5

g. Discuss any two disorders associated with overnutrition. 5

h. Discuss the functions of primase and helicase. 2.5+2.5

i. What is K_m? Write about its significance. 2+3

2. Answer **any ten** questions 10x2=20

a. Differentiate between nucleoside and nucleotide.

b. Define RDA.

c. What is a gene?

d. What are the disadvantages of LWB plot?

e. Name the coenzyme of transaminase enzyme.

f. What is E.C. number?

g. What is anticodon?

h. Explain the principle of complementary base pairing.

i. Write the equation of Eadie-Hofstee plot.

j. What is the site of translation?

k. What do you understand by bioavailability?

Part II

Answer **any eight** questions 8x5=40

3. How does the presence of competitive inhibitor affects K_m and V_{max} ? 2.5+2.5

4. Koshland's model can explain allosteric modulations. Justify. 5

5. Give the structures of adenine and cytosine. 2.5+2.5

6. Mention the factors that must be considered in geriatric nutrition. 5

7. What is splicing? Explain alternative splicing. 2+3

8. What do you understand by enzyme specificity? 5

9. Differentiate between metal activated enzymes and metalloenzymes. 5

10. DNA replication is bidirectional. Explain with diagram. 5

11. Describe the role of TPP in decarboxylation. 5