Ex/FTBE/BS/B/T/221/2022

B. E. FTBE Examination, 2022

(2nd Year, 2nd Semester)

Biochemistry and Nutrition II

Time : Three hours | Full Marks : 100

Part I (20 Marks)

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

1. How do enzymes increase the rate of reaction? 2
2. Mention any one metabolic function of iodine. 2
3. Discuss the interaction of fibres with other nutrients. 2
4. Explain induced fit model. 2
5. Give the structure of vitamin C. 2
6. In DNA how the two strands of double helix are held together? 2
7. What is nucleoside? 2
8. What do you understand by optimum pH of enzyme? 2
9. What is metalloenzyme? 2
10. What is apoenzyme? 2
11. What is the primary function of iron in body? 2
12. Name any transporter of iodine. 2

Part II (40 Marks)

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

1a. What is active site?
b. Name any enzyme that requires Mg^{2+} as cofactor. 3+2

2. How enzyme concentration affects enzyme activity? 5

3a. Why DNA replication is called semiconservative?

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b. What is the role of SSBP in replication? 3+2

4. Any enzyme with lower K_m value is more easily saturated than the enzyme with higher K_m value. Explain. 5

5a. Define RDA.
b. Differentiate between nucleoside and nucleotide.

6a. What is balanced diet?
b. What is its significance? 3+2

7. Presence of excess carbohydrate in diet increases thiamine requirement. Explain. 5

8. Discuss the role of vitamin A in vision. 5

9. Explain the mechanism of action of RNase A. 5

Part III (40 Marks)

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

1a. What do you understand by substrate analogue inhibition?
b. Explain in details. 2+3

2a. What is specific acid catalysis?
b. What is nucleosome? 2+3

3a. What do you understand by bioavailability?
b. How vitamin C affects iron bioavailability? 2+3

4. Explain the effect of uncompetitive inhibitor on LWB plot. 5

5. What is Okazaki fragments? Give diagram. 5

6. Discuss the functions of vitamin C. 5

7a. Differentiate between DNA and RNA
b. Why DNA replication is called semiconservative? 3+2

8. Discuss the role of vitamin B_6 in transamination reaction. 5

9. Fischer's model can explain the specificity of enzymes. Justify. 5