Ex/FTBE/BS/B/T/211/2024

BACHELOR OF ENGINEERING IN FOOD TECHNOLOGY AND BIO-CHEMICAL ENGINEERING EXAMINATION, 2024

(2nd Year, 1st Semester)

BIOCHEMISTRY AND NUTRITION I

Time : Three hours | Full Marks : 100

Part I (60 Marks)

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

a. What are the sources of two nitrogen atoms and one carbon atom of urea formed in urea cycle? What is the significance of urea cycle? 3+2

b. Describe alpha helix of protein structure with diagram. 5

c. Distinguish between MUFA and PUFA. 5

d. What is Cori cycle? 5

e. Glycolysis and gluconeogenesis are reciprocally regulated. Explain 5

f. Give the reaction catalysed by transaldolase in pentose phosphate pathway 5

g. Explain carnitine shuttle. 5

h. Discuss any two significances of NADPH. 2.5+2.5

i. Mention any two functions of lipid. 5

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

a. Differentiate between parallel and antiparallel beta sheet of protein.

b. Define chemical score of protein.

c. What are antioxidants?

d. What is deamination reaction?

e. Name the coenzyme of transaminase enzyme.

f. What is glycogenin?

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g. What is lipotropic agents?

h. Define protein.

i. What are essential fatty acids?

j. What is the site of TCA cycle?

k. What do you understand by glycemic index?

Part II (40 Marks)

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

3. What is ketogenesis? Where does it occur? 2.5+2.5

4. Give the names of urea cycle enzymes. 5

5. Name the enzymes of fatty acid synthase complex. 5

6. Why HDL is regarded as good cholesterol? 5

7. What is Ramachandran plot? What is its significance? 2+3

8. What do you understand by lipoprotein? How are they classified? 2+3

9. Differentiate between simple and mixed triacylglycerol. 5

10. Can the same amount of amino acids create different proteins? 5

11. Mention two characteristics of peptide bond. 5