B.Sc. (Part–I) Semester–II Examination

2S : FOOD SCIENCE

(Nutritional Biochemistry of Foods)

Time : Three Hours] [Maximum Marks : 80

N.B. :– (1) **All** questions are compulsory.

(2) Diagrams and chemical equations should be given whenever necessary.

1. (A) Fill in the blanks with suitable word :

(i) Bile is stored in _____ organ.

(ii) Carbohydrate is stored in muscle and liver as _____.

(iii) Proteins are broken in the stomach by the action of _____ and _____.

(iv) Hydrolysis of lactose yields _____ and _____. 2

(B) Choose the correct alternative from given options :

(i) Fructose is metabolized into :

(a) Fructose 1-phosphate (b) Fructose 6-phosphate

(c) Glyceraldehyde 3-phosphate (d) Both (a) and (b)

(ii) Humans are unable to digest :

(a) Starch (b) Simple carbohydrate

(c) Protein (d) Cellulose

(iii) Saliva contains all of the following except :

(a) Hormones (b) Amlyase

(c) Bacteria killing enzymes (d) Antibodies

(iv) The conversion of pyruvate to lactate is catalysed by :

(a) Pyruvate carboxylase (b) Lactated dehydrogenase

(c) Pyruvate dismutase (d) Pyruvate decarboxylase 2

(C) Answer the following in one sentence :

(a) Give the functions of vitamin 'C'

(b) What is NPU (Net Protein Utilization)

(c) Give the importance of lipoprotein

(d) What is glycogenesis with examples. 4

2. (A) Explain the protein quality 4

(B) Explain urea cycle 4

(C) Discuss about absorption of proteins. 4

OR

(D) Explain functions of proteins 4

(E) How are foodstuff digested in the GI tract ? 4

(F) What is protein energy malnutrition ? Give symptoms of Kwashiorkor. 4

3 Discuss the [illegible] importance of carbohydrates. How they are digested and absorbed ? 12

OR

Enlist the various pathways involved in the carbohydrates metabolism, give reaction and citric acid cycle in brief 12

4 (A) Give the classification of enzymes 4

(B) What is specificity of enzymes ? Explain with example. 4

(C) What are the factors affecting enzyme action ? 4

OR

(D) Give the role of enzymes in digestion. 4

(E) Explain allosteric inhibition of enzyme. 4

(F) Describe mechanism of enzyme action 4

5 (A) What are saturated and unsaturated fatty acid ? Explain with example. 4

(B) What are the important functions of lipids ? 4

(C) Give an account of classification of lipids with examples. 4

OR

(D) Explain the reactions involved in β-oxidation of fatty acids. 4

(E) What are the effects of excess fat in the body ? 4

(F) Explain essential and non essential fatty acid with example. 4

6. (A) Give an account of function and sources of Vitamin D. 4

(B) What are the function, sources and deficiency symptoms of iron ? 4

(C) Give RDA, sources and deficiency symptoms of Vitamin A. 4

OR

(D) Give an account of the function, sources and deficiency symptoms of calcium. 4

(E) Define vitamins, give their functions. 4

(F) What is the physiological role of follic acid ? 4

7. Define chromatography, classify with examples and uses. Explain its principle. 12

OR

State function and importance of water. Explain the water balance. 12

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