



WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 2nd Semester Examination, 2023

FNTACOR03T-FOOD AND NUTRITION (CC3)

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.
All symbols are of usual significance.*

Answer any four questions from the following

1. (a) What is mutarotation? 2
(b) Distinguish between – (any four) 2×4 = 8
 - (i) D- and L- sugar.
 - (ii) Reducing and non reducing sugar.
 - (iii) Amylose and amylopectin.
 - (iv) Cis and trans fatty acids.
 - (v) Cellulose and hemicellulose.

2. (a) What do you mean by micelles? 2
(b) Discuss the biological importance of amphipathic lipids. 4
(c) Define iodine number. 2
(d) What do you mean by hydrolytic rancidity? 2

3. (a) How do you assess protein quality? 4
(b) Write a short note on Zwitterion. 2
(c) What are meant by N-terminal end and C-terminal end amino acid? 2
(d) Give examples of a globular proteins and fibrous proteins (one from each) 2

4. (a) What is meant by rate limiting enzymes? 2
(b) What happened when glucose reacts with phenylhydrazine? 3
(c) How glucose is converted to fructose? 3
(d) Write the Haworth's representation of glucose. 2

5. Write the names and structure of amino acids with the following groups – 2×5 = 10
 - (a) Hydroxyl amino acids.
 - (b) Sulfur containing amino acid.
 - (c) Amino acids with positively charged side chain.

- (d) Amino acids with non-polar aromatic side chain.
(e) Imino acid.
6. (a) What do you mean by PER? 2
(b) Write a short note on BV. 3
(c) Define liposomes. 2
(d) Write a short note on hydrogenation. 3
7. (a) What do you mean by water activity? 2
(b) How does water activity influence the quality and stability of foods? 3
(c) What do you mean by entropy? 2
(d) Write a short note on colloids. 3
8. (a) What do you mean by K_m ? 2
(b) Define coenzyme. 2
(c) Write a short note on competitive and mixed inhibitions. 2+2
(d) Mention the importance of viscosity in nutrition. 2
9. Define the following term – 2×5 = 10
(a) Ribozymes
(b) Saponification number
(c) NPU
(d) Dietary fibres
(e) PUFA.

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WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 2nd Semester Examination, 2023

FNTACOR04T-FOOD AND NUTRITION (CC4)

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.
All symbols are of usual significance.*

Answer any four questions from the following

10×4 = 40

1. (a) What are the differences between sympathetic and parasympathetic nervous systems? 4+2+2+2
(b) What is myasthenia gravis?
(c) Name two types of cholinergic receptors.
(d) What is isometric contraction?
2. (a) Briefly describe the mechanism of transmission of impulses through the chemical synapses. 5+5
(b) Briefly describe the electron microscopic structure of skeletal muscle.
3. (a) What is Bell-Magendie law? 2+3+5
(b) What is Babinski reflex?
(c) Briefly discuss the role of hypothalamus in controlling of feeding and satiety.
4. (a) Why pituitary gland is known as the “Master gland”? 2+5+3
(b) What are the functions of growth hormone (GH)?
(c) Discuss briefly the effects of excess growth hormone during childhood.
5. (a) Discuss in brief the uterine and ovarian changes in normal ovulatory menstrual cycle. 6+(2+2)
(b) Define amenorrhoea and dysmenorrhoea.
6. (a) What is spermatogenesis? 2+4+(2+2)
(b) Discuss in brief the different stages of spermatogenesis.
(c) Mention the functions of prostate fluid and Sertoli cells.

7. (a) Discuss in brief the roles of different hormones in the maintenance of pregnancy. 5+5
(b) Describe the structure and functions of auditory hair cells.
8. (a) Discuss the steps of biosynthesis of thyroid hormones. 5+5
(b) Describe the physiological functions of thyroid hormones.
9. (a) Enlist the hormones secreted from pancreas with the name of the particular cells where from it is secreted. 2+5+3
(b) Explain the functions and regulation of secretion of insulin.
(c) How calcium level is maintained in blood?

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