

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: BTECH
BRANCH: FOOD TECHNOLOGY

SEMESTER : IV
SESSION : SP/2025

SUBJECT: FE205 FOOD CHEMISTRY

TIME: 3 HOURS

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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Q.1(a)	Describe the food deterioration rate with a function of water activity. Label the schematic representation of an ionic cell around a monovalent cation. Discuss the different forms of water present in food.	[5] 2	1
Q.1(b)	Show the formation of various organized phospholipid structures. Differentiate digestible and non-digestible carbohydrates with examples. Draw the Howarth structure of two cyclic structures of glucose.	[5] 1	2
Q.2(a)	Write the different oxidation reagent for glucose oxidation. Compare the properties between amylose and amylopectin. Evaluating the parameters depends on the retrogradation of starch.	[5] 3	5
Q.2(b)	Illustrate the biuret test of proteins. Name two Sulphur containing amino acid with chemical structures. Write the structures of α , β , γ amino butanoic acid.	[5] 2	4
Q.3(a)	Illustrate the first step of β oxidation pathway of fatty acids.	[5] 3	4
Q.3(b)	Describe ketogenesis pathway.	[5] 3	1
Q.4(a)	Discuss the protein digestion in stomach. Illustrate the forces responsible for tertiary structure of proteins. Write the formula for PDCAAS.	[5] 5	2
Q.4(b)	Demonstrate the functions of proteins in fluid balance in the human body. Discuss the different methods of denaturation of proteins. Give examples of two essential amino acids with chemical structures.	[5] 4	3
Q.5(a)	Classify enzymes as per new system.	[5] 5	5
Q.5(b)	Describe the factors affecting enzyme activity.	[5] 5	1

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