

Register No.: ..... Name: .....

**SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)**

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

**THIRD SEMESTER B.TECH DEGREE EXAMINATION (R,S), DECEMBER 2023****FOOD TECHNOLOGY****(2020 SCHEME)****Course Code: 20FTT205****Course Name: Food Chemistry****Max. Marks: 100****Duration: 3 Hours****PART A*****(Answer all questions. Each question carries 3 marks)***

1. Explain the role of food.
2. Comment on the forms of water present in food.
3. Write a short note on browning reactions of carbohydrates.
4. Draw the ring structure of glucose and fructose.
5. Differentiate essential and non-essential amino acids. Give the names of four essential amino acids.
6. Animal proteins are superior to plant proteins. Justify the statement with examples.
7. Describe fat replacers.
8. What is the role of shortening agents?
9. List out four determinants of BMR.
10. Explain the role of fibre in human nutrition and mention its sources.

**PART B*****(Answer one full question from each module, each question carries 14marks)*****MODULE I**

11. a) What are the components of food? Give an account of different food groups. (7)
- b) Describe water activity and methods for determining water activity. (7)

**OR**

12. a) Explain the structure of water. (6)
- b) Explain the importance of water quality in food processing. (8)

**MODULE II**

13. a) Describe the functions and classification of carbohydrates. (8)
- b) What are sugar alcohols and sugar acids? (6)

**OR**

14. a) Explain modified and resistant starch. (6)

- b) Explain the effect of moist heat and dry heat on starch. (8)

**MODULE III**

15. a) Discuss on the functions and dietary sources of proteins. (6)  
b) Explain protein denaturation with causes and changes. (8)

**OR**

16. a) Give a detailed account of classification of enzymes, enzyme activity and enzymes inhibitors . (10)  
b) List out four enzymes used in food industry and explain their major role. (4)

**MODULE IV**

17. a) Explain acid value, iodine value and saponification value  
Compare smoke point, flash point and fire point of fats. (7)  
b) Differentiate saturated and unsaturated fatty acids with examples.  
Explain the role of essential fatty acids on health. (7)

**OR**

18. Elaborate on mechanism of auto oxidation, rancidity, reversion of fats and role of antioxidants. (14)

**MODULE V**

19. a) Give an essay on water soluble Vitamins. (8)  
b) Give an account of sources, functions and deficiency of any two minerals. (6)

**OR**

20. a) How can you calculate the calorific value of food using bomb calorimeter? (8)  
b) Define balanced diet. What are the causes of over nutrition and under nutrition? (6)

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