Register No.: …… Name: ……..

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

THIRD SEMESTER B.TECH DEGREE EXAMINATION (Regular), FEBRUARY 2022
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. What are the different food groups? How are they classified?
2. Define water activity. Why is it important?
3. What is starch? Name any two commercial sources of starch.
4. Explain gelatinization and retrogradation with respect to starch.
5. What is meant by protein denaturation? Give an example of a denaturation agent
6. Elucidate the structure of an amino acid. When does it exist as a Zwitter ion?
7. What are fat replacers? Give examples.
8. What is the role of shorteners in food?
9. What is BMR? What are the factors affecting BMR?
10. List out the water-soluble vitamins and mention the disease caused by it

PART B

(Answer one full question from each module, each question carries 14 marks)

MODULE I

11. a) Draw the structure of water molecule and elucidate its properties. How does water help in food processing? (10)
    b) What is water activity and write the equation for measuring the water activity of a food sample? (4)

OR

12. a) What are the principle components of food? Why is it necessary to study food chemistry? (7)
    b) What are the different kinds of water found in food? Write any two estimation methods (7)

MODULE II

13. a) How are carbohydrates classified? Explain with relevant examples. (10)
    b) What are sugar alcohols? Where can you find them? (4)

OR

14. a) Give short notes on
    i) Modified and resistant starch (8)
    ii) Dextrose Equivalent
    b) Detail on the functional roles of carbohydrates in food. (6)

MODULE III

15. Detail on the physical and chemical properties of proteins. (14)

OR

16. a) Elaborate on texturized proteins with example. (8)
    b) What is meant by isoelectric point? What is its relevance? (6)

MODULE IV

17. a) Differentiate between saturated and unsaturated fats with examples. (8)
    b) What is meant by emulsification and why is it required? (6)

OR

18. a) What are lipids? Detail on their classification with examples and structure. (10)
    b) What causes rancidity of fats? (4)

MODULE V

19. Give the functions, dietary requirements and deficiency symptoms of fat-soluble vitamins. (14)

OR

20. What is the importance of a balanced diet? What are the problems caused by under- and over-nutrition? (14)

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