

Register No.: Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

FIFTH SEMESTER B.TECH DEGREE EXAMINATION (R,S), DECEMBER 2023**FOOD TECHNOLOGY****(2020 SCHEME)****Course Code : 20FTT301****Course Name: Food Process Engineering****Max. Marks : 100****Duration: 3 Hours****PART A*****(Answer all questions. Each question carries 3 marks)***

1. What is the need for processing the food materials? Mention any four processing techniques.
2. List out any three physical and functional properties of food.
3. Define size reduction and mention its application in food processing.
4. State the different laws of size reduction with equation.
5. Draw the drying rate curve and state the various points.
6. What is COP in refrigeration system?
7. Differentiate baking and frying process.
8. Elucidate the different stages in heat transfer during frying process.
9. State the theory of extrusion cooking process.
10. What is the principle of radio frequency heating? Mention any three applications in food processing.

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

11. a) Mention and explain the various methods employed for peeling of fruits and vegetables. (7)
- b) Classify the cleaning methods and list out the different types of equipment used. (7)

OR

12. a) State the importance of blanching process and explain its effect on foods. (8)
- b) Define the terms F, D, and Z value. (6)

MODULE II

13. Explain the construction and working of any two-size reduction equipment based on compression. (14)
- OR
14. Discuss the principle behind homogenization and explain single stage homogenizer with a neat sketch. (14)

MODULE III

15. a) Derive the Plank's equation to predict the freezing time of food materials. (10)
- b) Write a note on thawing of foods. (4)

OR

16. Describe the construction and working of spray drier with neat sketch and its application. (14)

MODULE IV

17. a) Detail the types of equipment used in frying process. (10)
- b) Differentiate direct and indirect heating mechanism. (4)

OR

18. a) State the principle behind the baking process and explain the working of any two machines used. (10)
- b) Mention the effect of roasting process in food quality parameters and nutritive value. (4)

MODULE V

19. a) Explain the principle and process followed in the ohmic heating of foods (6)
- b) Describe the working of single screw extruder with neat diagram. (8)
- OR**
20. a) State the theory, mechanism of inactivation of cell and explain the components and working of high-pressure processing. (7)
- b) Write about the mechanism of microbial inactivation using pulsed electric field processing. (7)
