

Register No:

Name.....

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

SEVENTH SEMESTER B.TECH DEGREE EXAMINATION (R), DECEMBER 2023

(2020 SCHEME)

Course Code : 20FTT413**Course Name: Food Processing Engineering****Max. Marks : 100****Duration: 3 Hours****PART A****(Answer all questions. Each question carries 3 marks)**

1. Draw the flow chart of classification of rheology.
2. Write short note on theory behind centrifugation.
3. Differentiate between D value and Z value.
4. List out the purpose and objectives of blanching.
5. Explain the term water activity and write the equation for water activity.
6. Describe characteristics of spray drying process.
7. Elucidate the various methods of quick freezing.
8. Explain advantages of extrusion technology.
9. Elaborate Capital cost estimation.
10. Define Break even points.

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

11. a) List out various size reduction equipment used in food industry and explain any four in detail with neat diagram (14)

OR

12. a) Explain any two rheological models in detail. (7)
b) Describe the importance and applications of rheology in food industry. (7)

MODULE II

13. a) Compare pasteurization and sterilization process. (4)
b) Explain the classification of pasteurization process. Explain any one pasteurization equipment in detail with supporting diagram. (10)

OR

14. a) The results of thermal experiment gave a D value of 7.5 minutes at 110°C. If there were 4.9×10^4 survivors at 10 minutes. Determine the following (8)
- i) Initial population of microorganism (N_0)
 - ii) Reaction rate constant
 - iii) The ratio of N/N_0 for 5, 15 and 20 minutes
 - iv) Final population (N) of survivors at 5, 15 and 20 minutes
- b) List out advantages and disadvantages of sterilization. (6)

MODULE III

15. a) Explain Raoult's law. (5)
- b) Explain water sorption isotherms in detail with graph. (9)

OR

16. a) List out different types of dryers used in food industry? Explain any one in detail with neat sketch. (9)
- b) Draw and explain drying curve. (5)

MODULE IV

17. a) Explain freeze drier in detail. (10)
- b) List out advantages and disadvantages of freeze drier over other freezing methods? (4)

OR

18. a) List out non-thermal methods of food preservation. (4)
- b) Explain food irradiation in detail. (10)

MODULE V

19. a) Differentiate between fixed cost, variable cost and total cost. (7)
- b) Write short note on product and process layout in detail. (7)

OR

20. a) Write note on inventory control and its types of inventory models. (10)
- b) Explain accuracy of estimate. (4)
