

Register No.: Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

SEVENTH SEMESTER B.TECH DEGREE EXAMINATION (S), FEBRUARY 2024

(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. Differentiate sorting and grading.
2. Identify the factors affecting Rheology.
3. Describe thermo bacteriology.
4. Explain the process of size reduction in food processing with an example.
5. Define blanching and its advantages.
6. Describe Raoul'ts law equation.
7. List out the applications of drying in food processing.
8. Differentiate freezing and drying.
9. Differentiate the process layout and product layout.
10. Explain the importance of expansion and improvements of existing facilities.

PART B

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

MODULE I

11. Explain the process of centrifugation with its applications, advantages and disadvantages. (14)

OR

12. a) A given material can behave like solid or a liquid depending on the time scale of deformation process. Choose the rheological model satisfying the given statement and support the answer with suitable justification. (6)
- b) Differentiate between elastic, plastic, viscous and visco elastic behaviors with examples. (8)

MODULE II

13. a) List out any three types of thermal processing in food processing and define each of the processing with its application (9)
- b) Predict the application of Arrheniu's equation in food processing and also explain the equation. (5)

OR

14. a) Compare batch and continuous sterilization with its advantages and disadvantages. (8)
b) Outline the application of fermenter in food processing and also explain its design. (6)

MODULE III

15. a) Define water-sorption isotherms. (4)
b) List out the water activity measurement methods and explain. (6)
c) Analyze the effect of water activity in food processing. (4)

OR

16. Outline drying process in food preservation with types of dryers and its components. (14)

MODULE IV

17. a) Compare blending and pulverization. (6)
b) Outline the process of food irradiation and also list out the equipment involved. (8)

OR

18. a) What are the major non-thermal methods involved in food processing and explain each method with suitable examples. (8)
b) Differentiate between single-screw and twin-screw extruder. (6)

MODULE V

19. a) Imagine that you are going to renew a poultry processing industry for including some more products to your list. Predict capital cost investment for the same with proper explanation. (10)
b) Define module cost estimation. (4)

OR

20. a) Describe the applications of product and process layout in food industry. (6)
b) Define the terms detailed cost estimate, inventory control, cost index and accuracy of estimate. (8)
