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Name:

Reg. No.....

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2021

(CUCBCSS-UG)

(Regular/Supplementary/Improvement)

CC17U FTL6 B15 - FOOD ENGINEERING

(Food Technology - Core Course)

(2017 Admission onwards)

Time: Three Hours

Maximum: 80 Marks

PART A

Answer *all* questions. Each question carries 1 mark.

Name the following:

1. Temperature for UHT pasteurization is -----?
2. The refrigeration load is normally expressed as -----
3. Example for time dependent Newtonian liquid -----
4. What is the equation for the Fourier's law of conduction?
5. An example for non- contact type heat exchanger is -----
6. Thermal process used to eliminate specific pathogenic microorganisms from food is -----
7. The difference between a pasteurizer and sterilizer is only in -----
8. Heat Exchangers are used to -----
9. Refrigeration systems are ----- moving machines.
10. The contamination of the residual proteinaceous materials is known as -----

(10 × 1 = 10 Marks)

PART B

Answer any *five* questions. Each question carries 2 marks.

11. Differentiate driers and Evaporators
12. Difference between conduction and convection modes of heat transfer.
13. Write the working principle of water-tube boiler.
14. Write about falling film evaporator.
15. Describe Newtonian and Non- Newtonian fluids.
16. What are the characteristic of a good refrigerant?

(5 × 2 = 10 Marks)

PART C

Answer any *six* questions. Each question carries 5 marks.

17. Explain Single and Multiple effect evaporator schematically?
18. Differentiate water tube & fire tube boilers.
19. What is freezing rate? Explain freezing curve with diagram.
20. Explain different drying rate period involved in grain drying?
21. . Explain HTST process for pasteurization. How this different from UHT processing.
Give merits and demerits of both the processes
22. Differentiate Quick freezing & slow freezing.
23. Explain the working of a plate heat exchanger. Give its merits, demerits and application in food industry.
24. Describe with a neat diagram a spray drier and its applications in food processing.

(6 × 5 = 30 Marks)

PART D

Answer any *two* questions. Each question carries 15 marks.

25. Describe different types of driers employed in food industries. With neat diagram.
26. Explain the classification of heat exchangers? With the help of a neat sketch explain the functioning of shell and tube Heat Exchanger?
27. Explain vapour absorption system and vapour compression system? Also explain their difference?
28. What is refrigeration, Ton of refrigeration and Explain the application of refrigeration in food industries?

(2 × 15 = 30 Marks)
