

20U5106

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Name:

Reg. No.....

FIFTH SEMESTER B.Voc. DEGREE EXAMINATION, NOVEMBER 2022

(Regular/Supplementary/Improvement)

CC18U GEC5 FE13 – FOOD ENGINEERING

(Food Processing Technology – Common Course)

(2018 Admission onwards)

Time: Three Hours

Maximum: 80 Marks

PART A

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

1. The mode of heat transfer takes place in a metallic tube due to molecular fusion is -----
2. Temperature range of quick freezing is ----- °C
3. The pathogenic organisms in a food can be killed by the process known as -----
4. Name the drier used for making milk powder.
5. What is the unit of viscosity?
6. Write the units of energy (any 2).
7. Name 2 preservation techniques used in food industry.
8. Name 3 methods of heat transfer.
9. What do you mean by evaporation?
10. Which are the non contact type heat exchangers used in food industry? (Any 2)

(10 × 1 = 10 Marks)

PART B

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

11. Draw a neat diagram of vapor compression refrigeration system with labelling.
12. Which are the non-Newtonian fluids?
13. Where do you find the application of immersion heat transfer in a food industry?
14. Define freeze drying and the principle behind it.
15. What do you mean by COP?
16. What are the uses of boilers in food industry?
17. What do you mean by cryogenic freezing?
18. Write the equation to find shear and stress.
19. Define constant rate period of drying.
20. State the principle of water tube boiler.
21. Write the features of horizontal tube evaporator.
22. What is molecular diffusion?

(8 × 2 = 16 Marks)

PART C

Answer any *six* questions. Each question carries 4 marks.

23. Write a brief note on plate heat exchanger.
24. Write the characteristics of Newtonian fluids with the help of a chart.
25. What is radiation heat transfer?
26. How falling film evaporator differs from falling and raising film evaporator?
27. Give short note on LTLT.
28. Write a note on drum drier and it's application.
29. Write a short note on slow freezing.
30. Write a note on multiple effect evaporator.
31. Write the principle of fire tube boiler and it's components.

(6 × 4 = 24 Marks)

PART D

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

32. Write about any 3 of the following
 - a) Tunnel drier
 - b) Fluidized bed drier
 - c) Spray drier
 - d) Cabinet drier
33. Define heat transfer and explain different modes of heat transfer
34. Write in detail about any 3 of the following. Draw diagrams if needed.
 - a) Scrapped surface heat exchanger
 - b) UHT
 - c) Shell and tube heat exchanger
 - d) HTST
35. Discuss different contact and non contact freezing methods (Minimum 3 types)

(2 × 15 = 30 Marks)
