

**23U468**

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Name : .....

Reg. No : .....

**FOURTH SEMESTER B.Voc. DEGREE EXAMINATION, APRIL 2025**

(CBCSS-UG)

(Regular/Supplementary/Improvement)

**CC21U SDC4 FE12 - FOOD ENGINEERING**

(Food Processing Technology - Skill Component Course)

(2021 Admission onwards)

Time: 2.5 Hours

Maximum: 80 Marks

Credit: 4

**Part A** (Short answer questions)

Answer *all* questions. Each question carries 2 marks.

1. Define angle of repose of food materials.
2. Give an account on specific heat.
3. Write about air comparison pycnometer.
4. Comment about Newtonian liquids.
5. Differentiate Newtonian and non-Newtonian fluids.
6. What is Newton's law of viscosity?
7. What are the basic components of a mechanical refrigeration system?
8. Name four refrigerants used for industrial application.
9. What is cryogenic freezing?
10. Define evaporation.
11. Differentiate drying and dehydration.
12. What is a cabinet drier?
13. Write the Stefan-Boltzmann law of radiation.
14. Note down the applications of scraped surface heat exchangers.
15. Expand LTLT, HTST and UHT.

**(Ceiling: 25 Marks)**

**Part B** (Paragraph questions)

Answer *all* questions. Each question carries 5 marks.

16. Briefly explain the functioning of an airblast freezer.
17. Draw the sketches of a falling film evaporator.

18. Draw a neat sketch and describe the working principle of spray dryer and give its industrial applications.
19. Write about fluidized bed drier.
20. How convection mode of heat transfer differs from conduction mode? Give two systems that use convection mode of heat transfer.
21. How heat exchangers are classified?
22. Describe working of plate heat exchanger with a neat diagram.
23. Differentiate water tube and fire tube boiler with a neat sketch.

**(Ceiling: 35 Marks)**

**Part C (Essay questions)**

Answer any *two* questions. Each question carries 10 marks.

24. Discuss about the different types of Evaporators.
25. What is drying? Explain in detail about fluidized bed dryer, drum dryer and tunnel dryer with neat sketch.
26. With a neat sketch describe the working of HTST pasteurizer. Give merits and demerits of this process.
27. Explain fire tube and water tube boiler with figures.

**(2 × 10 = 20 Marks)**

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