

QP CODE: 22000345



Reg No :

Name :

MSc DEGREE (CSS) EXAMINATION , JANUARY 2022

Second Semester

M Sc FOOD TECHNOLOGY AND QUALITY ASSURANCE

CORE - FQ010201 - FOOD ENGINEERING

2019 Admission Onwards

19A49FFD

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. Describe phase diagram of water.
2. Define the log mean temperature difference (LMTD). Mention its significance.
3. State the Stefan Boltzmann law and explain the meaning of each term with appropriate units.
4. Explain dynamic viscosity with the help of an experiment.
5. Comment on entrance region and fully developed region of a fluid flow?
6. Write down the Bernoulli's' equation and explain all the terms involved?
7. Differentiate between cross-flow filtration and dead-end filtration.
8. Define the term sedimentation. Give an example relevant to food processing.
9. Explain air-blast freezers. Mention its advantages and disadvantages.
10. Give a note on Rising-Film Evaporator.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. Explain the following a) Dimensional consistency b) Phase diagram of water.
12. Write a detailed note on thermal properties of food.
13. What is the design principle of Pitot tube?
14. Discuss Volumetric Flow Rate of a Power Law Fluid.





15. What do you mean by membrane separation? Briefly explain the types of membranes used for separation.
16. Describe process of distillation with suitable example.
17. Why CFCs are being phase-out? What are the alternative refrigerants to CFCs?
18. Give a detailed illustration of Multistage system in refrigeration.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Describe different types of heat exchangers with schematic diagram citing three examples?
20. How can we determine the energy requirements for fluid flow under steady-state conditions?
21. Discuss about different type of mixers used in food industry.
22. Discuss about reduction of the energy requirements in a multiple effect evaporator by vapor recompression systems.

(2×5=10 weightage)

