

Roll No. :

S-1173

B. Sc. (Food Technology) (Third Semester)
Examination, 2018-19
Paper Fourth
(Food Engineering)

Time : Three Hours]

[Maximum Marks : 60

Note : Attempt all sections as directed.

Section—A

Note : Answer all the questions. Each question carries 1 mark.

Fill in the blanks :

1. heat transfer can occur in Perfect Vacuum.
2. The law of thermodynamics states that the heat flows only in the direction of decreasing temperature.
3. Sensible Heat which is added to a Saturated Vapour is known as
4. The Water Tube Boiler is efficient than Fire Tube Boiler.
5. Plate Heat Exchanger is normally used for Viscous Fluids.

Choose the correct answer :

6. A Dimensionless Number which represents the rate of Inertia Force to Viscous Force is :
(a) Reynold's Number (b) Froude's Number
(c) Prandtl Number (d) Stanton Number
7. Which of the following Heat Exchangers is used for Ice Cream Preparation?
(a) Plate Heat Exchanger
(b) Shell and Tube Heat Exchanger
(c) Scraped Surface Heat Exchanger
(d) Steam Infusion Heat Exchanger
8. The Convective Mass Transfer is more observed in :
(c) Constant rate period of drying (b) Falling rate period of drying
(c) Throughout rate period drying (d) None
9. Economy of a Single Effect Evaporates is :
(a) Always more than one (b) Always less than one
(c) Always one (d) None
10. When Hot and Cold Fluid Flow in same direction in Heat Exchanger than flow is called :
(a) Parallel (b) Co-current
(c) Counter-current (d) Both (a) and (b)

Section-B

Note : Attempt *any five* questions. Each question carries 4 marks.

11. What is Newton's Law of Viscosity?
12. What is Fourier's Law? What is its importance in Food Processing?
13. Differentiate between Natural Convection and Forced Convection.
14. Describe a Falling Film Evaporator system with a neat diagram.
15. What do you mean by Thixotropic and Rheopectic Fluids.
16. What are the two different Refrigeration Systems? Compare them.
17. Write a short note on : (a) EMC (b) CMC.

Section-C

Note : Attempt *any three* questions. Each question carries 10 marks.

18. Describe with a neat diagram a Fluidized Bed Dryer and its applications in Food Processing.
19. Write the Principles of Freezing. Describe the Absorption Refrigeration Cycle with a neat diagram.
20. Define various mode of Heat Transfer. Derive an expression for Heat Transfer in a cylindrical pipe.
21. What is meant by Constant Rate Period and Falling Rate Period? Why do they occur in Drying Process?
22. Write the Principles of Heat Exchanger. Describe a typical Shell and Tube Heat Exchanger with a neat diagram.