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Reg. No...............................

Name....................................

M.Sc. DEGREE (C.S.S.) EXAMINATION, JUNE 2018

Second Semester

Faculty of Science

Branch : Food Technology and Quality Assurance/Food Science and Technology / Food Science and Quality Control

FT2 MPC 707—FOOD ENGINEERING

Time : Three Hours   Maximum Weight : 30

Part A (Short Answer Type Questions)

Answer any **five** *questions out of the following.*
1 *weight each.*

1. What is Bernoulli's theorem ?

2. What is reverse osmosis ?

3. Define Newton's law of Viscosity.

4. Briefly explain on steam distillation.

5. Differentiate between leaching and extraction.

6. Briefly explain the types of membrane used for separating fractional distillation.

7. State Stefan Boltzmann's law.

8. Discuss the modes of heat transfer.

$(5 \times 1 = 5)$

Part B (Short Essay Type Questions)

Answer any **five** *questions out of the following.*
2 *weights each.*

9. Write a simple sketch of a centrifuge and explain how particles are separated in a centrifuge.

10. Write short notes on mechanical vapour compression refrigeration.

11. Discuss the fundamentals of fluid flow and Reynolds number.

12. Derive an expression for a conductive heat transfer through a cylindrical material.

13. Explain the role of insulation in reducing heat from process equipment with a suitable example.

14. How evaporation differs from drying ?

Turn over

15 With the help of a simple sketch explain the working of a spray drier.

16 Describe briefly the unsteady state heat transfer.

(5 × 2 = 10)

Part C (Essay Type Questions)

Answer any **three** *questions out of the following.*
5 weights each.

17 What is overall Heat Transfer co-efficient ? Give its significance.

18 Explain different types of freezers used in food industry.

19 Describe briefly the single and multiple effect evaporating systems.

20 Explain about different reverse osmosis and ultra filtration systems for food processing.

21 Explain the mechanism of refrigeration.

22 Describe the various kinds of filtration with suitable diagrams.

(3 × 5 = 15)