



**P-1612010701610100**      Seat No. \_\_\_\_\_

**M. P. M. (Sem. I) Examination**

**June / July - 2018**

**Unit Operation - I : BP - 101**

**Time : 3 Hours]**

**[Total Marks : 80]**

**Instructions :**

- (1) Answer and tie both the sections separately.
- (2) Figure to the right indicates marks.
- (3) Answer any three (3) questions from each section.
- (4) Que. one (1) and Que. five (5) are compulsory.
- (5) Draw neat and clean diagrams as required.

**SECTION - I**

**1** Answer any **seven** out of given ten questions :  **$7 \times 2 = 14$**

- (a) What do you mean by Filter aids and give examples of it.
- (b) Give the difference between evaporation and drying.
- (c) Define Equilibrium Moisture content and Free Moisture content.
- (d) Why Infra Red dryer is not commonly used now a days ?
- (e) Differentiate between filtration centrifuge and sedimentation centrifuge.
- (f) Define : Azeotropic Distillation and Extractive Distillation.
- (g) Give the statement of Henry Law.
- (h) List out the factors affecting the rate of filtration.
- (i) Define : Refrigerant and give examples of it.
- (j) Give the statement of Duhring's Rule and Raoult's Law.

**2** Answer the following :

- (a) Write a short note on Tray Dryer. **7**
- (b) Write a brief note on flash distillation. **6**

**3** Answer the following : 7

- (a) Write a short note on Method of measurement of Humidity.
- (b) Write a short note on Multiple Effect Evaporation. 6

**4** Answer the following : 7

- (a) Define dehumidification and explain its mechanism and approaches.
- (b) Define centrifugation. Discuss principle and theory of centrifugation. 6

## SECTION – II

**5** Answer any **two** out of given three questions : **2×7=14**

- (a) Explain the principle, construction, working, uses, advantages and disadvantages of Spray dryer with labelled diagram.
- (b) Explain the construction, working, advantages and disadvantages of Rotary Drum Filter.
- (c) Write a brief account on steam distillation.

**6** Answer the following : 7

- (a) Explain the Perforated Basket Centrifuge.
- (b) Explain the different factors affecting rate of evaporation. 6

**7** Answer the following : 7

- (a) Explain Plate and Frame filter press with labelled diagram.
- (b) Explain the different types of distillation column. 6

**8** Answer the following : 7

- (a) Describe compression refrigeration cycle with diagram.
- (b) Explain Drying rate curve. 6

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