

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm. – SEMESTER – IV • EXAMINATION – WINTER • 2016

Subject Code: 2240001

Date: 22-10-2016

Subject Name: Unit Operations-II

Time: 10:30 am - 01:30 pm

Total Marks: 80

Instructions:

- 1. Attempt any five questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**

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|------------|--|-----------|
| Q.1 | (a) Define filtration. Give the types and mechanism of filtration processes. | 06 |
| | (b) Write a note on conical disc centrifuge. | 05 |
| | (c) Explain in brief edge-filter. | 05 |
| Q.2 | (a) Describe theory of filtration. | 06 |
| | (b) Explain cartridge filter with suitable diagram. | 05 |
| | (c) Write a note on FBD. | 05 |
| Q.3 | (a) Draw schematic diagram of molecular distillation and discuss its application in pharma industry. | 06 |
| | (b) Define 'azeotropes. Write a note on preparation of Absolute alcohol. | 05 |
| | (c) Liquid mixture of ethanol and water is in equilibrium with a vapor containing ethanol and water at a total pressure of 760 mm.Hg. A sample of vapor indicates that it contains 3.3 moles of ethanol for every 1.7 moles of water. If the liquid has mole fraction of 0.52 ethanol what is relative volatility. | 05 |
| Q.4 | (a) Define drying. Give the detailed classification of dryers. Give the neatly labeled diagram of spray dryer. | 06 |
| | (b) Describe the factors affecting evaporation. | 05 |
| | (c) Write a note on microwave. | 05 |
| Q.5 | (a) Write a note on rectifying column. | 06 |
| | (b) Explain Duhring's rule and Raoult's law. | 05 |
| | (c) Explain climbing film evaporator. | 05 |
| Q.6 | (a) Describe the method of drying rate calculation. | 06 |
| | (b) Explain refrigeration cycles. | 05 |
| | (c) Explain air conditioning. | 05 |
| Q.7 | (a) Write a note on HVAC system. | 06 |
| | (b) Describe with suitable diagram falling film evaporator. | 05 |
| | (c) Explain the psychrometric chart. | 05 |
