

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm. – SEMESTER – IV • EXAMINATION – WINTER • 2015

Subject Code: 2240001

Date: 05-01-2016

Subject Name: Unit Operations-II

Time: 02:30 pm - 05:30 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) Explain filter media, its ideal properties and factor affecting its selection.
Give the examples of filter media. | 06 |
| | (b) Write working principle and application of perforated basket 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 lyophilization. | 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) Write a note on steam distillation. | 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) Draw a labeled diagram of triple effect 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 psychometric chart. | 05 |
