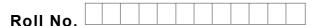
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Total No. of Pages : 02

Total No. of Questions : 10

### B.Pharma (2011 to 2016) (Sem.-4) PHARMACEUTICS IV (Unit Operation-II) Subject Code : BPHM-401 Paper ID : [D1140]

Time: 3 Hrs.

Max. Marks: 80

#### **INSTRUCTIONS TO CANDIDATES :**

- 1. SECTION-A is COMPULSORY consisting of FIFTEEN questions carrying TWO marks each.
- 2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- 3. SECTION-C contains FOUR questions carrying TEN marks each and students have to attempt any THREE questions.

# SECTION-A section-A

- Q1. Define :
  - a. Mole fraction
  - b. Size reduction
  - c. Unit operations
  - d. Viscosity
  - e. Raoult's law
  - f. Distillation
  - g. Distillation
  - h. CMC
  - i. Heat transfer
  - j. Volatility

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#### **Distinguish between :**

- k. Freeze drying and vacuum drying
- 1. positive deviation vs negative deviation from Raoult's law
- m. Ball mill and Hammer mill
- n. Single and multiple effect evaporators
- o. Colloidal mill and fluid energy mill.

#### **SECTION-B**

- Q2. A tube 0.09 in. OD is lagged with 0.02 in. layer of asbestose with a conductivity of 0.10 Btu/hr. ft<sup>2</sup> °F followed 0.06 in. layer of cork whose conductivity is 0.06 Btu/hr. ft<sup>2</sup> °F. If the temperature difference between inner and outer surface is 1400 °F, Calculate heat loss.
- Q3. Classify evaporators? What are the factors effecting evaporation.
- Q4. Explain the deviations from Raoult's law with examples.
- Q5. Highlight the mechanisms of drying. Brief principle of vacuum drying.
- Q6. Explain the principles of size Reduction.

## **SECTION-C**

- Q7. Discuss the role of size separation in a size reduction process. Give principle and working of fluid energy mill.
- Q8. Explain the principle, construction and working of hammer mill.
- Q9. How could you calculate the number of theoretical plates needed for a distillation process?
- Q10. Comment on the following :
  - a. In spray drying, the temperature at which the sprayed droplet dries is much lower than the temperature of the gas used for drying.
  - b. Size reduction in ball mill is by impact only
  - c. Steam distillation occurs at 100°C.

# NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

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