B. PHARM.

(SEM. IV) EXAMINATION. 2006-07

PHARMACEUTICS - IV
(UNIT OPERATION - II)

Time : 3 Hours] [Total Marks : 80

Note: 1) Attempt all the questions.
       2) All questions carry equal marks.
       3) In case of numerical problems assume data wherever not provided.
       4) Be precise in your answer.

1 Answer any four of the following: 4x4=16
   (a) Write about rate processes?
   (b) Define the terms mole volume and mole fraction.
   (c) Write briefly about tie substances.
   (d) What do you understand by equilibrium state?
   (e) Write a note on energy balance.

2 Answer any four of the following: 4x4=16
   (a) Discuss the factors affecting evaporation.
   (b) What are natural circulation evaporators. Discuss any one of them.
   (c) Discuss the principle and working of a forced circulation evaporator.

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(d) Write a note on capacity of an evaporator.
(e) Write about vapour recompression evaporator?

3 Answer any **four** of the following:  \[4 \times 4 = 16\]
(a) Discuss the theory of fractional distillation.
(b) Discuss the principle and appreciations of molecular distillation.
(c) Write a note on preparation of purified water by distillation.
(d) Discuss the applications of steam distillation.
(e) Draw a neat labelled diagram of a unit for continuous fractional distillation.

4 Answer any **four** of the following:  \[4 \times 4 = 16\]
(a) Classify drying equipment giving examples.
(b) Define the terms
   (i) Free moisture content
   (ii) Critical moisture content
(c) Compare freeze drying and spray drying.
(d) Discuss the principle and uses of tray dryer.
(e) Discuss disadvantages and applications of freeze drying.

5 Answer any **two** of the following:  \[4 \times 4 = 16\]
(a) Write an account of indicating instruments.
(b) Explain the terms:
   (i) On-off control
   (ii) Unit process control
   (iii) Feed forward control
   (iv) Feed back control.
(c) Write about reactor design, illustrate with suitable diagrams.