



Printed Pages : 2

PHAR – 241

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 5104

Roll No.

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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 : **4×4=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 : **4×4=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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[Contd...

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

3 Answer any **four** of the following : **4×4=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 : **4×4=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 : **4×4=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.