

F.Y.B.PHARM. SEMESTER-II (2011 COURSE) : SUMMER - 2018

SUBJECT: PHARMACEUTICAL ENGINEERING - II

Day: **Wednesday**
Date: **02/05/2018**

S-2018-3948

Time: **10.00 AM TO 01.00 PM**
Max. Marks: **80**

N.B.;

- 1) **Q. No. 1 and Q. No. 5 are COMPULSORY.** Out of remaining questions attempt any **TWO** questions from each section.
- 2) Answers to both the sections should be written in the **SEPARATE** answer books.
- 3) Figures to the right indicate **FULL** marks.

SECTION – I

- Q.1** Solve any **FIVE** of the following: **(10)**
- a) What are modes of heat transfer?
 - b) What is principle of climbing film evaporator?
 - c) Explain various stages of drying.
 - d) Explain working of heat exchangers in general.
 - e) Enlist factors affecting distillation.
 - f) What is vapor recompression?
- Q.2**
- a) Classify distillation processes. Discuss in detail about azeotropic distillation. **(10)**
 - b) Discuss in detail about tubular heat exchanger. **(05)**
- Q.3**
- a) Explain principle construction and working of falling film evaporator. **(08)**
 - b) Explain theories of drying. **(07)**
- Q.4** Write notes on any **THREE** of the following: **(15)**
- a) Vacuum distillation
 - b) Plate heat exchanger
 - c) Forced circulation evaporator
 - d) Scale formation

SECTION – II

- Q.5** Attempt any **FIVE** of the following: **(10)**
- a) What is diffusion in crystallization?
 - b) What is pelletization?
 - c) Give principle of tablet compression machine.
 - d) What is antisolvent crystallization?
 - e) Give principle of fluid bed granulation.
 - f) What is dosator principle in capsule filling?
- Q.6**
- a) Give different methods for crystallization. Discuss in detail crystallizers using cooling methods. **(10)**
 - b) What is principle of co-crystallization? Explain it with examples? **(05)**
- Q.7**
- a) Explain principle of crystallization adiabatic evaporation process. Add a note on any equipment based on the same principle. **(08)**
 - b) Explain principle working of fluidized bed granulation with its application. **(07)**
- Q.8** Write note on any **THREE** of the following: **(15)**
- a) Miers theory of crystallization
 - b) Extrusion spherodization
 - c) Roller compactor
 - d) Growth type crystallizer

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