

F.Y.B.PHARM. SEMESTER-II (CBCS - 2015 COURSE) :
WINTER - 2017

SUBJECT: PHARMACEUTICAL ENGINEERING – II

Day: **Thursday**
Date: **16/11/2017**

W-2017-3785

Time: **10.00 AM TO 01.00 PM**
Max. Marks: 60

N.B.:

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

- Q.1** Attempt any **FIVE** of the following: (10)
- a) What is significance of drying in pharmacy?
 - b) What is constant rate period in drying?
 - c) What is azeotropic distillation?
 - d) Draw a neat labelled diagram of fractional distillation unit.
 - e) What are the steps involved in spray drying?
 - f) What are advantages of tunnel tray dryer over conventional tray dryer?
- Q.2** What is drying? Explain in detail theory of drying with a neat labelled diagram. (10)
- Q.3** a) Explain principle and working of long tube evaporators. (06)
b) Explain tubular heat exchangers with a labelled diagram. (04)
- Q.4** Write short notes on any **TWO** of the following: (10)
- a) Freeze drying
 - b) Simple distillation
 - c) Heat transfer between fluid and solid boundary

SECTION - II

- Q.5** Attempt any **FIVE** of the following: (10)
- a) What do you mean by crystal habit?
 - b) What are co-crystals?
 - c) What are advantages of glass over plastics in packaging?
 - d) What is the principle of spray drying?
 - e) Give examples of two products based on pellets.
 - f) What precautions have to be taken for light sensitive drugs packaging?
- Q.6** What are pellets? Give methodology and applications of extrusion and spherodization in pharmacy. (10)
- Q.7** a) Give principle, equipments and working of crystallizers based on supersaturation by cooling. (06)
b) Explain methods to determine humidity. (04)
- Q.8** Write short notes on any **TWO** of the following: (10)
- a) Spray congealing
 - b) Oslo crystallizer
 - c) Air conditioners