

F.Y.B.PHARM. SEMESTER-I (CBCS - 2015 COURSE) :

WINTER - 2017

SUBJECT: PHARMACEUTICAL ENGINEERING – I

Day: **Wednesday**

Date: **15/11/2017**

Time: **10.00 AM TO 01.00 PM**

Max. Marks: 60

W-2017-3779

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.

SECTION-I

- Q.1** Attempt any **FIVE** of the following: **(10)**
- a) What are applications of size reduction in pharmacy?
 - b) Give method for size separation of a suspension.
 - c) What is counter current extraction?
 - d) What is mechanism of cutter mill?
 - e) What are applications of fluid energy mill?
 - f) Differentiate between open circuit milling and closed circuit milling?
- Q.2** What is Extraction? Give different methods of liquid liquid extraction. **(10)**
- Q.3**
- a) Explain working of edge and end runner mills with suitable diagrams. **(06)**
 - b) Explain pressure differential flowmeters with diagrams. **(04)**
- Q.4** Write short notes on any **TWO** of the following: **(10)**
- a) Fluid past immersed bodies
 - b) Percolation battery extractor
 - c) Flow of fluids through pipe

SECTION-II

- Q.5** Attempt any **FIVE** of the following: **(10)**
- a) What are the benefits of automation in pharma industry?
 - b) What are applications of HEPA filter?
 - c) What is propeller?
 - d) What is bubble point test?
 - e) Give examples of mixers useful for granulation.
 - f) Give two examples of filter aids.
- Q.6** Define mixing. Explain principles and working of mixers used for liquid-liquid mixing. **(10)**
- Q.7**
- a) Describe methods to test integrity of membrane filters. **(06)**
 - b) Give mechanisms of solid - solid mixing and enlist the equipments useful for it. **(04)**
- Q.8** Write short notes on any **TWO** of the following: **(10)**
- a) Filter press
 - b) Chemical hazards in industry
 - c) Planetary mixer

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