F.Y.B.PHARM. SEMESTER-I (CBCS - 2015 Course) : WINTER - 2018
SUBJECT: PHARMACEUTICAL ENGINEERING - I

Day: Monday
Date: 19/11/2018

W-2018-4064

Time: 10.00 A.M. TO 01.00 P.M.
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) Answer to the both sections should be written in **SEPARATE** answer books.
4) Draw neat and labeled diagram **WHEREVER** necessary.

SECTION - I

Q.1 Attempt **ANY FIVE** of the following: **(10)**

a) Define Rittinger's law.
b) What is continuous counter current contact?
c) Classify equipments used for size separation.
d) Draw labeled diagram of pitot tube.
e) Classify pressure measurement equipments.
f) Classify size reduction equipments based on their mechanism of working.

Q.2 **a)** Explain principle & working of variable area flowmeters. **(06)**

b) Explain principle and working of fluid energy mill. **(04)**

Q.3 **a)** Classify solid-liquid extraction equipments. Explain principle & working of any one of them. **(06)**

b) Add a note cyclone separator. **(04)**

Q.4 Write short notes on **ANY TWO** of the following: **(10)**

a) Mechanism of fluid flow.
b) Mixer setter.
c) Hammer mill.

SECTION - II

Q.5 Attempt **ANY FIVE** of the following: **(10)**

a) What are mechanical hazards?
b) Give significance of baffles
c) What is bubble point test?
d) What are the benefits of automation in pharma industry?
e) Draw labeled diagram of versator.
f) Explain mechanisms of filtration.

Q.6 **a)** Explain in detail theory of filtration. **(06)**

b) Add a note on HEPA filters. **(04)**

Q.7 **a)** Enlist liquid-liquid mixing equipments. Explain principle & working of any one of them. **(06)**

b) Explain principle & working of planetary mixer. **(04)**

Q.8 Write short notes on **ANY TWO** of the following: **(10)**

a) Fire hazards
b) Powder mixers
c) Filter aids

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