

SUBJECT: PHARMACEUTICAL ENGINEERING - I

Day: Friday
Date: 03/05/2019

S-2019-4373

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.
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SECTION - I

- Q.1** Attempt **ANY FIVE** of the following: (10)
- a) Draw labeled diagram of rotameter.
 - b) Give mechanisms of size reduction.
 - c) Classify solid-liquid extraction equipments.
 - d) Explain factors affecting screening.
 - e) Classify flowmeters.
 - f) Give significance of flow of fluids in pharmacy.
- Q.2** a) Explain in detail principle & working of ball mill (06)
- b) Classify liquid-liquid extractors. Draw labeled diagram of any one of them. (04)
- Q.3** a) Classify equipments used for size separation of solids. Explain principle & working of any one of them. (06)
- b) Explain in detail Bernoulli's theorem. (04)
- Q.4** Write short notes on **ANY TWO** of the following: (10)
- a) Theory of size reduction.
 - b) Flow of fluids through pipe.
 - c) Mechanisms of solid-liquid extraction.

SECTION - II

- Q.5** Attempt **ANY FIVE** of the following: (10)
- a) Give benefits of automation in pharma industry.
 - b) Explain the terms used to assess quality of mixture.
 - c) What are fire hazards?
 - d) Give mechanisms of liquid-liquid mixing.
 - e) What are filter aids?
 - f) Enlist problems created by entrapped air during mixing.
- Q.6** a) Enlist filtration equipments. Explain principle and working of any one of them. (06)
- b) Explain principle and working of powder mixers. (04)
- Q.7** a) Explain in detail theory of filtration. (06)
- b) Explain principle & working of planetary mixer. (04)
- Q.8** Write short notes on **ANY TWO** of the following: (10)
- a) Diosna mixer
 - b) Chemical hazards
 - c) Methods to test integrity of membrane filters.