

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.Ph. SEMESTER-II • EXAMINATION – WINTER -2019**

Subject Code: BP203TP

Date: 18/12/2019

Subject Name: Pharmaceutical Engineering

Time: 10:30AM TO 01:30PM

Total Marks: 80

**Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

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|------------|-----|---|-----------|
| <b>Q.1</b> | (a) | Define Co-efficient of discharge. Give the difference between Orificemeter and Venturimeter.        | <b>06</b> |
|            | (b) | Describe the construction, working principles of fluid energy mill.                                 | <b>05</b> |
|            | (c) | Define and classify the powder as per IP and enlist the specification of sieves.                    | <b>05</b> |
| <b>Q.2</b> | (a) | With a neat diagram explain the falling film evaporator & climbing film evaporator.                 | <b>06</b> |
|            | (b) | Explain Fourier's law in heat transfer.   | <b>05</b> |
|            | (c) | Define distillation and discuss the application of distillation process in field of pharmacy.       | <b>05</b> |
| <b>Q.3</b> | (a) | Explain the drying rate curve and write its application.  | <b>06</b> |
|            | (b) | Enlist mixers for semisolids. Describe planetary motion mixer.                                      | <b>05</b> |
|            | (c) | Explain construction, working of freeze dryer.  | <b>05</b> |
| <b>Q.4</b> | (a) | What are basket centrifuges? Describe the theory of centrifugation.                                 | <b>06</b> |
|            | (b) | Explain theory of and mechanism of filtration.  | <b>05</b> |
|            | (c) | Explain principal, construction, working and advantages with labeled diagram of Metafilters.        | <b>05</b> |
| <b>Q.5</b> | (a) | Discuss the various factors affecting selection of material of plant construction.                  | <b>06</b> |
|            | (b) | What is corrosion? Mention the factors that influence rate of corrosion.                            | <b>05</b> |
|            | (c) | What are the properties of glass? What are its applications as material of construction?            | <b>05</b> |
| <b>Q.6</b> | (a) | Define distillation and write a note on Raoult's law.   | <b>06</b> |
|            | (b) | Describe the mechanism of size reduction with suitable examples of equipment.                       | <b>05</b> |
|            | (c) | Write a note on Rotameter.  | <b>05</b> |
| <b>Q.7</b> | (a) | Explain the terms: Positive Mixture, Negative Mixture and Neutral Mixture giving suitable examples. | <b>06</b> |
|            | (b) | Discuss principle, construction, working, merits and demerits of spray dryer with labelled diagram. | <b>05</b> |
|            | (c) | Elaborate the concept of multiple effect evaporation.   | <b>05</b> |

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