

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.Ph. SEMESTER-II • EXAMINATION – SUMMER -2022**

**Subject Code:BP203TP****Date: 06/09/2022****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 size reduction. Discuss mechanisms of size reduction with suitable Diagram.                          | <b>06</b> |
|             | (b) Define: Nominal Aperture Size and Sieve Number and write the mechanism of working of Alpine Air jet Sieve   | <b>05</b> |
|             | (c) Describe ball mill with working principle.  | <b>05</b> |
| <b>Q.2</b>  | (a) Define: clarification and Differentiate surface filtration and depth filtration.                            | <b>06</b> |
|             | (b) Write principle, construction, working, advantages, disadvantages and applications of filter leaf.          | <b>05</b> |
|             | (c) Write Kozeny- carman equation and give the principal of filtration process.                                 | <b>05</b> |
| <b>Q.3</b>  | (a) Explain the terms: (1)Drying(2) EMC (3)Bond moisture (4) Unbound moisture (5)CMC (6) LOD                    | <b>06</b> |
|             | (b) Discuss principle, construction, working, merits and demerits of spray dryer with labeled diagram.          | <b>05</b> |
|             | (c) Differentiate Drying and evaporation.   | <b>05</b> |
| <b>Q.4</b>  | (a) With a neat diagram explain the falling film evaporator & climbing film evaporator                          | <b>06</b> |
|             | (b) Explain the terms: Positive Mixture, Negative Mixture and Neutral Mixture giving suitable examples.         | <b>05</b> |
|             | (c) Enlist mixers for semisolids. Describe planetary motion mixer.  | <b>05</b> |
| <b>Q.5</b>  | (a) What are basket centrifuges? Describe the theory of centrifugation.   | <b>06</b> |
|             | (b) Define and classify the powder as per IP and enlist the specification of sieves.                            | <b>05</b> |
|             | (c) Explain Raoult's law and Dalton's law.  | <b>05</b> |
| <b>Q. 6</b> | (a) What are the merits and demerits of venturi meter over orifice meter?                                       | <b>06</b> |
|             | (b) Explain Fourier's law in heat transfer  | <b>05</b> |
|             | (c) Write a note on Rotameter.  | <b>05</b> |
| <b>Q.7</b>  | (a) Describe principle, construction, working, merits and demerits of fluidized bed dryer with labeled diagram. | <b>06</b> |
|             | (b) What are the properties of glass? What are its applications as material of construction?                    | <b>05</b> |
|             | (c) What is corrosion? Mention the factors that influence rate of corrosion.                                    | <b>05</b> |

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