

GUJARAT TECHNOLOGICAL UNIVERSITY
B.PHARM - SEMESTER- 3 EXAMINATION – SUMMER -2019

Subject Code: 2230002

Date: 01-06-2019

Subject Name: Pharmaceutical Engineering

Time: 02:30 PM TO 05:30 PM

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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|-------------|---|-----------|
| Q.1 | (a) What is tie substance? Briefly explain the principle of material balance taking example of a tie substance. | 06 |
| | (b) Define stoichiometry. Give significance of “stoichiometry” in pharmacy field. | 05 |
| | (c) Define and explain the terms with appropriate example
(1) Dimensional analysis
(2) Dimensional formulae | 05 |
| Q.2 | (a) What is Reynolds number? Give it significance. | 06 |
| | (b) Enumerate types of manometer. Explain differential manometers. | 05 |
| | (c) Enumerate energy losses in pipe. Explain Enlargement losses. | 05 |
| Q.3 | (a) Explain Fourier’s law. | 06 |
| | (b) Explain Overall heat transfer coefficient. | 05 |
| | (c) Derive the equation for conduction when metal in series. | 05 |
| Q.4 | (a) Describe in brief diagrams various pumps used for transportation of sterile liquids. | 06 |
| | (b) Write a brief note on storage of liquids and gases in plant. | 05 |
| | (c) Write note on various rotary positive displacement pumps. | 05 |
| Q.5 | (a) Write a note on pneumatic conveyer. | 06 |
| | (b) Define corrosion. Write a note on factors affecting the corrosion. | 05 |
| | (c) Write a short note on Glass as a material for plant construction. | 05 |
| Q. 6 | (a) Discuss the various methods for the prevention and control of corrosion. | 06 |
| | (b) Discuss the various factors affecting selection of material of pharmaceutical plant construction. | 05 |
| | (c) Explain solid – Fluid mass transfer. | 05 |
| Q.7 | (a) Write a note on Rotameter. | 06 |
| | (b) Explain Black Body and gray body. | 05 |
| | (c) Give the difference between Orifice meter and Venturi meter. | 05 |
