Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharm. – SEMESTER – I • EXAMINATION – WINTER 2013

Subject Code: 210004 **Date: 30-12-2013**

Subject Name: Pharmaceutical Engineering

Time: 02.30 pm - 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.**

Q.1 (a) Define Pharmaceutical engineering. Differentiate unit operation from unit process giving suitable illustration. (8)

(b) What is the difference between SI unit and CGS unit? What is dimensionless group? Explain it giving suitable illustration. (8)

Q.2 (a) Define stoichiometry and explain its significance in pharmacy. Write a note on Tie-substance. (8)

(b) Enumerate various gas laws and their application. (8)

Q.3 (a) What is the difference between manometer and flow meter? Write a basic equation for fluid flow. (8)

(b) Write a note on Rotameter. (8)

Q.4 (a) Write a note on design of a store in Pharma. Industry. (8)

(b) What is the color coding in various pipe lines to handle fluids in Pharma.Industry.(8)

Q.5 (a) What do you mean by film as resistance in heat transfer? (8)

(b) Write a note on ideal properties of steam as a heating media. (8)

Q.6 (a) Suggest the unit operation involving solid/fluid and fluid/fluid mass transfer. (8)

(b) Discuss various factors affecting selection of material of plant construction. (8)

Q.7 (a) What do you mean by corrosion? Discuss any one theory of it. (8)

(b) Classify material used in pharma. Plant construction and suggest comparison of any two material. (8)

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