

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BPHARM – SEMESTER II • EXAMINATION – WINTER • 2014**

**Subject code: 220006**

**Date: 10-12-2014**

**Subject Name: Physical Pharmacy**

**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.**

|             |     |                                                                                        |           |
|-------------|-----|----------------------------------------------------------------------------------------|-----------|
| <b>Q.1</b>  | (a) | State the phase rule. Discuss two component systems containing liquid phases in brief. | <b>06</b> |
|             | (b) | Write a brief note on liquid crystals.                                                 | <b>05</b> |
|             | (c) | Discuss solubility of gases in liquids.                                                | <b>05</b> |
| <b>Q.2</b>  | (a) | What are buffers? Discuss buffer equation for weak acid and its salt.                  | <b>06</b> |
|             | (b) | Enlist methods of adjusting tonicity. Discuss White-Vincent method in detail.          | <b>05</b> |
|             | (c) | What are colloids? Give their pharmaceutical applications.                             | <b>05</b> |
| <b>Q.3</b>  | (a) | What is micromeritics? Discuss one method used to determine particle volume.           | <b>06</b> |
|             | (b) | Write a note on buffer capacity.                                                       | <b>05</b> |
|             | (c) | What is stoke's diameter? How it is determined?                                        | <b>05</b> |
| <b>Q.4</b>  | (a) | Write a note on derived properties of powders.                                         | <b>06</b> |
|             | (b) | Discuss any one method for determining particle surface area.                          | <b>05</b> |
|             | (c) | Write a note on thixotropy.                                                            | <b>05</b> |
| <b>Q.5</b>  | (a) | Write a note on Non-Newtonian systems.                                                 | <b>06</b> |
|             | (b) | Enlist methods of determining viscosity. Discuss any one in detail.                    | <b>05</b> |
|             | (c) | Differentiate flocculated and deflocculated suspensions.                               | <b>05</b> |
| <b>Q. 6</b> | (a) | Enlist theories of emulsification. Discuss any two theories in detail.                 | <b>06</b> |
|             | (b) | What is controlled flocculation? Write a note on flocculating agents.                  | <b>05</b> |
|             | (c) | Discuss ideal gas law in detail.                                                       | <b>05</b> |
| <b>Q.7</b>  | (a) | Write a note on optical properties of colloids.                                        | <b>06</b> |
|             | (b) | What is surface tension? Discuss any one technique of determining surface tension.     | <b>05</b> |
|             | (c) | Write a note on spreading coefficient.                                                 | <b>05</b> |

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