| Seat No.: | Enrolment No. |
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## GUJARAT TECHNOLOGICAL UNIVERSITY BPHARM – SEMESTER II • EXAMINATION – WINTER • 2016

Subject code: 2220001 Date: 13-01-2017

**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.

| Q.1  | (a)               | Write in brief on nature of the intra- and intermolecular forces involved in stabilizing molecular and physical structures.   | 06             |
|------|-------------------|---|----------------|
|      | (b)<br>(c)        | Discuss two component system containing phenol water liquid phases. Write a note on liquid crystals.  | 05<br>05       |
| Q.2  | (a)               | Classify various viscometers. Describe a viscometer to find out viscosity of non-Newtonian fluids with labeled diagram.   | 06             |
|      | (b)<br>(c)        | Define and differentiate: Plastic and Pseudo-plastic flow.<br>What are applications of rheology in pharmaceutical industry?   | 05<br>05       |
| Q.3  | (a)<br>(b)<br>(c) | Give general principles of solubility. Write a note on spreading co-efficient. Explain solubility of solid in liquid.   | 06<br>05<br>05 |
| Q.4  | (a)<br>(b)<br>(c) | Describe methods of calculation of HLB value.  Explain any one method for measurement of surface and interfacial tensions.  Write a brief note on electric properties of interfaces.                              | 06<br>05<br>05 |
| Q.5  | (a)<br>(b)<br>(c) | Define complexation. Discuss methods of analysis of complexes. Which factors affects complexation and protein binding? Discuss in brief. Describe cyclodextrin complexes including their application in pharmacy. | 06<br>05<br>05 |
| Q. 6 | (a)<br>(b)        | Discuss factors affecting powder flow.  Enumerate derived properties of powder. How they affect pharmaceutical product manufacturing?   | 06<br>05       |
|      | (c)               | Which are the methods used for particle size determination? Explain optical microscopy method.  | 05             |
| Q.7  | (a)<br>(b)<br>(c) | Differentiate hydrophilic and lipophilic colloids. Write in brief on properties of colloids. Write a note on factors affecting stability of suspension.   | 06<br>05<br>05 |

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