

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

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

**GUJARAT TECHNOLOGICAL UNIVERSITY****B. Pharm. - SEMESTER-3 • EXAMINATION – SUMMER -2018****Subject code: 230002****Date: 02/05/2018****Subject Name: Pharmaceutical Engineering II****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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|------------|-----|---|-----------|
| <b>Q.1</b> | (a) | Discuss the regulatory requirements of content uniformity as per USP and European Pharmacopoeia.  | <b>06</b> |
|            | (b) | Enumerate sampling techniques for content uniformity.   | <b>05</b> |
|            | (c) | Define content uniformity. Enumerate significance of content uniformity.  | <b>05</b> |
| <b>Q.2</b> | (a) | Enumerate and explain different techniques used for improvement of powder flow.   | <b>06</b> |
|            | (b) | Define Carr's Index and Hausner's ratio with their pharmacopoeial specifications.   | <b>05</b> |
|            | (c) | Discuss the various factors affecting powder and granule flow.  | <b>05</b> |
| <b>Q.3</b> | (a) | Define Control chart. Enumerate different types of control charts and discuss any one.  | <b>06</b> |
|            | (b) | Discuss the elements of Control charts.   | <b>05</b> |
|            | (c) | Enumerate Control charts for attributes and explain c chart.  | <b>05</b> |
| <b>Q.4</b> | (a) | Define HME and explain its significance in Pharmaceutical Industry.   | <b>06</b> |
|            | (b) | Define pellets. Enumerate various factors affecting pellets properties.   | <b>05</b> |
|            | (c) | What is Eudragit? Explain its role in melt extrusion technology.  | <b>05</b> |
| <b>Q.5</b> | (a) | Explain the term supercritical fluid, critical temperature and critical pressure with the help of a pressure temperature phase diagram. | <b>06</b> |
|            | (b) | Name different techniques involved in micronization employing Supercritical fluid as an antisolvent.                                    | <b>05</b> |
|            | (c) | Define and explain pharmaceutical application of inclusion complex.   | <b>05</b> |
| <b>Q.6</b> | (a) | Explain the process of preparing Solid dispersion using supercritical fluid.  | <b>06</b> |
|            | (b) | Write advantages and disadvantages of RESS process.   | <b>05</b> |
|            | (c) | Explain applications of supercritical fluid in extraction process.  | <b>05</b> |
| <b>Q.7</b> |     | Write a note on following:  |           |
|            | (a) | Solid dispersion  | <b>06</b> |
|            | (b) | Screw extruder  | <b>05</b> |
|            | (c) | MCC in pelletization  | <b>05</b> |

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