

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm. – SEMESTER – III • EXAMINATION – WINTER 2013

Subject Code: 230002

Date: 17-12-2013

Subject Name: Pharmaceutical Engineering - II

Time: 10.30 am - 01.30 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 content Uniformity. Discuss its importance in pharmaceutical dosage forms. | 06 |
| (b) | Discuss content Uniformity acceptance criteria as per B.P. 2007. | 05 |
| (c) | Describe factors affecting achieving content uniformity. | 05 |

Q.2

- | | | |
|-----|--|-----------|
| (a) | Describe Scott Volumeter method for determination of bulk density. | 05 |
| (b) | Discuss factors affecting the flow of powder. | 04 |
| (c) | Enlist different methods used to measure powder flowability. Describe any one. | 04 |
| (d) | Explain the following terms: 1) Funnel flow 2) Mass flow. | 03 |

Q.3

- | | | |
|-----|--|-----------|
| (a) | Explain the following terms: 1) Relative standard Deviation
2) Bulk density & tap density 3) Adhesive & cohesive forces | 06 |
| (b) | What are the measures to alter flow property of a given sample. | 04 |
| (c) | What is importance of flow ability for pharmaceutical powders. | 04 |
| (d) | Which are the excipients used in pellets preparation? | 02 |

Q.4

- | | | |
|-----|---|-----------|
| (a) | Enlist types of control charts and explain in brief each. | 06 |
| (b) | Write selection criteria for selection of control chart for particular process. | 05 |
| (c) | Discuss errors occur in control chart. | 05 |

Q.5

- | | | |
|-----|---|-----------|
| (a) | Explain spheronization. Discuss in brief stages involved in spheronization process. | 06 |
| (b) | What is hotmelt Extrusion? Describe the process and equipment used for that. | 05 |
| (c) | Write advantages and disadvantages of pellets. | 05 |

Q. 6

- | | | |
|-----|--|-----------|
| (a) | What are pellets? Write their pharmaceutical applications and properties. | 06 |
| (b) | What is rapid expansion of supercritical solution (RESS) technique? What are its applications? | 05 |
| (c) | Draw and Explain phase diagram shows supercritical region with examples. | 05 |

Q.7

- (a) Describe method for production of particles from gas saturated solution. (PGSS) **06**
- (b) Coated tablet of Ranitidine Hydrochloride , each containing 150mg of active content (Ranitidine Hydrochloride) were prepared by wet granulation technique. Prepared tablets were evaluated for weight variation test. The individual weight of 20 tablets is given in the table. Do prepared tablets comply weight variation test as per USP? **06**

Sr. No.	Weight (mg)	Sr. no.	Weight (mg)	Sr. No.	Weight (mg)
1	190	8	196	15	203
2	195	9	187	16	198
3	198	10	207	17	195
4	204	11	200	18	201
5	209	12	206	19	194
6	196	13	197	20	208
7	185	14	189	-----	-----

- (c) What are ideal requirements of supercritical fluids? **04**
