Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharm. SEMESTER – III (OLD Syllabus)• EXAMINATION – SUMMER • 2015

Subject Code: 230002 **Date: 09-06-2015**

Subject Name: Pharmaceutical Engineering - II

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 content uniformity and explain in details its importance in pharmaceutical dosage forms.	**06**
	(b)	What are the factors responsible for content uniformity? How content uniformity be achieved?	**05**
	(c)	What are the regulatory requirements for weight variation test for solid dosage form as per IP.	**05**
Q.2	(a)	Enlist the various methods to examine the flow property of powder and discuss in detail about any one method to measure the angle of repose.	**06**
	(b)	Define flow properties. Discuss about importance of powder flow in pharmaceuticals.	**05**
	(c)	Discuss in detail about powder density measurement.	**05**
Q.3	(a)	Write about impact of adhesion and cohesion on flow property of powder. How shear strength can be measured?	**06**
	(b)	How can you alter the powder flow? Discuss with suitable examples.	**05**
	(c)	Enumerate and explain in brief about the types of control chart.	**05**
Q.4	(a)	What are the elements of control charts and discuss about the uses of control charts.	**06**
	(b)	Explain C chart and P chart for attributes.	**05**
	(c)	Define extrusion and spheronization. Discuss about production of pellets by extrusion-spheronization.	**05**
Q.5	(a)	Discuss about uses of various excipients in different pelletization technique.	**06**
	(b)	Discuss in detail about spheronizer.	**05**
	(c)	Write a note on Hot melt extrusion.	**05**
Q. 6	(a)	Discuss about application areas of supercritical fluids.	**06**
	(b)	Give Comment on-Supercritical fluid can improve bioavailability through dissolution enhancement.	**05**
	(c)	Discuss in detail about Gas Anti Solvent technology.	**05**

Q.7 (a) Enumerate and explain factors influencing powder or granules. **06**

(b) Directly compressible Tolbutamide microparticles was prepared by spherical agglomeration technique. Data of evaluation parameters of 20 gm sample are as follows: bulk volume: 40, Tapped volume: 35, Height of heap: 3 cm, Diameter of heap: 11.8 cm. Calculate Hausner's ratio, Carr's compressibility index and angle of repose for both the samples and report your conclusion. **05**

(c) Amoxicillin HCL capsules were prepared each containing 250 mg of amoxicillin HCL. The prepared capsules were evaluated for content uniformity test. Find out whether capsule batch comply IP 2007 standards for mass uniformity or not. Data of individual content of 10 capsules are as follows: **05**

Capsule No	Amoxicillin HCL content in mg
1	246
2	147
3	238
4	254
5	261
6	243
7	249
8	252
9	255
10	247

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