Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – III • EXAMINATION – WINTER • 2014

Subject code: 734003 **Date: 27-11-2014**

Subject Name: Powdered and Particulate Technology

Time: 02:30 pm - 05:00 pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q. 1	**(a)**	**Write the name of Equipment used for the Preblend operation of Powdered rubber and discuss its geometry and processing.**	**(07)**
	(b)	**Explain the mechanism of Cryogenic grinding method to prepare Powdered Rubber with schematic diagram.**	**(07)**
Q. 2	**(a)**	**"The amount & correct choice of Partitioning agent for various types of Powdered Rubber is critical." Justify the statement.**	**(07)**
Q. 2	**(b)**	**Mention the reason for the development of Compactor unit and explain its design with schematic diagram.**	**(07)**
		OR	
Q. 2	**(b)**	**Discuss in detail about MVX machine used for powdered rubber processing.**	**(07)**
Q. 3	**(a)**	**Explain the procedure and significance of T/50 test for powdered rubber compounds.**	**(07)**
Q. 3	**(b)**	**Draw and explain the apparatus used for the assessment of dust in solid rubber chemicals and describe the procedure.**	**(07)**
		OR	
Q. 3		**Discuss in detail about Cabot Torn Surface method.**	**(14)**
Q. 4		**Draw the processing flow charts showing Bale Rubber route and various powdered & particulate rubber routes and explain it in detail.**	**(14)**
		OR	
Q. 4		**Derive the Equation of conversion cost/kg for powdered rubber and discuss its economics in detail.**	**(14)**
Q. 5	**(a)**	**Compare the powdered rubber technology and Bale Rubber technology for adhesive application with graphical representation.**	**(07)**
	(b)	**How the powdered rubber processing is advantageous in injection and transfer molding? Explain it.**	**(07)**
		OR	
Q. 5		**Discuss the effect of Powdered Rubber technology on Mixing cycle, Power consumption and Plant maintenance.**	**(14)**

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