Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII(NEW) • EXAMINATION – WINTER 2016

Date:21/11/2016

Subject Code:2172303 I Subject Name:Additive and Compounding of Plastics

Time: 10.30 AM to 1.00 PM Total Marks: 70

Instructions:

1. Attempt all questions.

2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. **MARKS** 0.1 **Short Questions** 14 1 What is a blowing agent? What is the function of anti static agent? 2 3 State the function of a curing agent. 4 ____ & ___ are the most commonly used inorganic flame retardants. 5 What are slip additives? 6 _____ are also called anti sag agents 7 What is a chemical blowing agent? 8 What is the function of impact modifier? List any two commonly used plasticizers. Carbon black is used as also used as conductive filler. (True or False) 11 _____ is a commonly used blowing agent. ____ and ____ are the most commonly used gases 12 as a physical blowing agent. What is a nucleating agent? What is the purpose of heat stabilizer. What are plasticizers and what is its function? 0.2 03 What are additives? List the types of additives used in 04 plastics. Define fillers. Give functions of fillers. List common 07 (c) fillers and their uses. OR (c) Explain the construction and working of banburry mixer **07** with a neat sketch. Q.3 Define compounding. State the reasons for compounding. 03 (a) **(b)** Write a note on calcium carbonate as filler. 04 Explain the construction and working of a high speed **07** (c) mixture with a neat diagram. (a) List considerations for choosing a filler.. 03 0.3 **(b)** List the requirements of flame retardants. 04 What are antioxidants? Explain the mechanism of 07 polymer oxidation and draw the antioxidants cycle. (a) What are flame retardants? List the mechanism of **Q.4** 03 functioning of flame retardants. **(b)** Write a short note on lubricants. 04 (c) Explain the construction and working of twin screw 07

extruders used for compounding.

		OR	
Q.4	(a)	What is the purpose of a mold release agent?	03
	(b)	What are the basic requirements for an ideal blowing agent.	04
	(c)	Explain the construction and working of a two roll mill.	07
Q.5	(a)	List the limitations of mixing theory.	03
	(b)	List various methods used to form cellular plastics.	04
	(c)	List the technological requirements of additives.	07
		OR	
(b	(a)	Define anti blocking agents. List various antiblocking additives used for plastics.	03
	(b)	Write a short note on theory of mixing.	04
	(c)	Discuss in detail the construction and working of ribbon blender with a neat diagram.	07
