Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII (NEW) EXAMINATION – WINTER 2018

Subject Code: 2172312 **Date: 19/11/2018**

Subject Name: Additives and Compounding of Plastics

Time: 10:30 AM TO 01:00 PM **Total Marks: 70**

Instructions:

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

			MARKS
Q.1	**(a)**	Define additives and list various additives used to modify optical properties and mechanical properties.	**03**
	(b)	What is the function of Impact modifier? Discuss with suitable example.	**04**
	(c)	Discuss mechanism and types of Antioxidants used for plastics.	**07**
Q.2	**(a)**	Discuss Antistatic agent function and its types.	**03**
	(b)	With neat sketch discuss mechanism and working of Two roll mill.	**04**
	(c)	List various types of plasticizers used in plastics and discuss how addition of plasticizer affects Tg of PVC.	**07**
		OR	
	(c)	Discuss those additives which enhance the properties of waste plastics and facilitate their recycling process.	**07**
Q.3	**(a)**	How nucleating agent is useful for controlling crystalline structure? Discuss.	**03**
	(b)	List various non intensive type mixers and explain any one with neat diagram.	**04**
	(c)	With neat diagram explain working of twin screw extruder for compounding.	**07**
		OR	
Q.3	**(a)**	Write about Ribbon blender.	**03**
	(b)	Discuss types of flame retardants used in plastics.	**04**
	(c)	Define: Lubricants. Which are the types of Lubricants? Explain with suitable examples.	**07**
Q.4	**(a)**	How an Antiblocking additive works? Discuss.	**03**
	(b)	Give difference between single and twin screw extruder.	**04**
	(c)	How coupling agent works? Discuss its mechanism of functions in the composites.	**07**
		OR	
Q.4	**(a)**	Give function & types of blowing agents along with its applications.	**03**
	(b)	Write a note on: Fillers and reinforcements	**04**
	(c)	With help of neat diagram explain the working of a Banbury mixture used for compounding of plastics.	**07**
Q.5	**(a)**	State various technological requirements of additives.	**03**
	(b)	Explain High speed mixer with a neat sketch.	**04**
	(c)	Explain UV stabilization mechanism along with its examples.	**07**

OR

Q.5	**(a)**	Identify various materials selection as additives used in Gears and discuss its function.	**03**
	(b)	What do you mean by dispersive and distributive mixing? Discuss.	**04**
	(c)	Write a note on: Conductive additives	**07**

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