

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI • EXAMINATION – SUMMER • 2014

Subject Code: 162305

Date: 26-05-2014

Subject Name: Additives and Compounding

Time: 10.30 am - 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.

- Q.1** (a) What are the effect of additives on the properties of a compound. **07**
(b) What are the types of anti-oxidants and describe them in detail? **07**

- Q.2** (a) Write short notes on: **07**
(1) UV stabilizers (2) Colorants
(b) What do you understand by lubricants? What are the types of lubricants and give examples and describe each in short? **07**

OR

- (b) What is the effect of silica on the activity of heat stabilizers? **07**

- Q.3** (a) Draw a schematic diagram for Banbury mixer. **07**
Explain the various steps of compounding of plastics using this equipment?
(b) List the common technological requirements that general additives should meet? **07**

OR

- Q.3** (a) Describe in details the various functions of ribbon blender used for the compounding of plastics? **07**
(b) What is coupling agents? Explain the role of coupling agents with suitable agents? **07**

- Q.4** (a) Describe the methods of incorporation of additives in polymeric materials. **07**
(b) Write short notes on: **07**
(1) Flame retardents (2) Blowing agents

OR

- Q.4** (a) Write a short note on mixing and mixing equipments used for compounding of plastics? **07**
(b) Write short notes on: **07**
(1) Heat stabilizers (2) Additives for recycling

- Q.5** (a) What is compounding and what are the various methods of compounding? With the help of a neat diagram explain the working of a high speed mixer used for compounding? **07**
(b) Write short notes on: **07**
(1) Anti-static agents (2) Fibers and reinforcements

OR

- Q.5** (a) What is the selection criteria for the following additives. **07**
(i) Fillers and reinforcements. (ii) Colorants.
(iii) Blowing agents. (iv) Flame retardents
(b) Write the uses of additives in packaging, electronics and medical field? Explain the significance of their use in the said applications? **07**
