

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-VII (NEW) EXAMINATION – WINTER 2020****Subject Code:2172312****Date:21/01/2021****Subject Name:Additives and Compounding of Plastics****Time:10:30 AM TO 12:30 PM****Total Marks: 56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

MARKS

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|------------|---|-----------|
| Q.1 | (a) What are Additives? List the types of Additives used in Plastics. | 03 |
| | (b) Define the term Fillers. Give functions and classification of Fillers | 04 |
| | (c) Explain Selection Criteria for Additives used in Plastics. | 07 |
| Q.2 | (a) What are Plasticizers? Why and which Plasticizer used in PVC? | 03 |
| | (b) Describe Flame Retardants Additives with their examples in detail. | 04 |
| | (c) Give types of Lubricants. What is the purpose of a Mold Release Agent? | 07 |
| Q.3 | (a) Write short note on : Chemical and Physical Blowing Agents | 03 |
| | (b) What are the differences between Dyes and Pigments used as Additives? | 04 |
| | (c) State the function and examples of Impact Modifiers used in Plastics. | 07 |
| Q.4 | (a) Write short note on: Conductive Fillers. | 03 |
| | (b) Define the term Compounding. State the reasons for Plastics Compounding. | 04 |
| | (c) Describe Theories of Mixing. | 07 |
| Q.5 | (a) Enlist the technological requirements of Additives. | 03 |
| | (b) What is a Nucleating Agent? Give its examples. | 04 |
| | (c) Explain Distributive and Dispersive mixing. | 07 |
| Q.6 | (a) Write down the compounding process of plastics by Planetary Mixer. | 03 |
| | (b) Give details on the various steps of compounding of Plastics. | 04 |
| | (c) Explain the working of a High Speed Mixer used for compounding with the help of a neat diagram. | 07 |
| Q.7 | (a) Explain types of Twin Screw Extruders. | 03 |
| | (b) Write the uses of Plastics in Electronics and Medical industries with examples. | 04 |
| | (c) Explain the Banbury Mixture with a neat diagram as compounding equipment. | 07 |

- Q.8** (a) Write down the uses of Plastics in Packaging and Agriculture with examples. **03**
(b) Describe the functions of Ribbon Blender used for the compounding of Plastics. **04**
(c) Give a neat sketch of a Compounder Extruder, and explain its working in detail. **07**

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