

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-V • EXAMINATION – WINTER 2013

Subject Code: 152303

Date: 04-12-2013

Subject Name: Plastics Recycling and Waste Treatment

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) About the Plastics waste, give details of its Source reduction, Product Recovery and its Recycle **07**
(b) Discuss in details about the Plastics Waste Processing Techniques. Write about its collection, storage and transport mechanism. **07**
- Q.2** (a) Name the Polymers that can be reused. How are they different from the Polymers that cannot be reused **07**
(b) Explain the processes used in Recycling of Polypropylene. **07**
- OR**
- (b) Explain in detail about biodegradable plastics. **07**
- Q.3** (a) What is an Incinerator? Explain the uses of Incinerators in the field of Plastic Recycling Process. **07**
(b) Name the Polymers that are used for Food Packaging. Suggest the disposable ways of its waste. **07**
- OR**
- Q.3** (a) Write a short note on (i) Life Cycle Analysis of Plastics Waste and (ii) Plastics Waste as Fillers. **07**
(b) Explain the Secondary Recycling of Plastics waste by Co-Extrusion and Co-Injection Moulding. **07**
- Q.4** (a) Discuss in detail about the effects of recycling of plastics waste on Environment. **07**
(b) Explain the recycling process of Plastics Woven Sack Waste. **07**
- OR**
- Q.4** (a) Enlist the identification symbol of different plastics with their properties and applications. **07**
(b) List out the various methods used to separate different plastics. Explain in detail about Float and Sink Method. **07**
- Q.5** (a) List out the different types of Pyrolysis systems. Explain about Fluidized bed Pyrolysis Reactor with schematic diagram. **07**
(b) Discuss the various problems associated with the Incineration of pure plastics waste. **07**
- OR**
- Q.5** (a) Write short notes on (i) Contaminants, (ii) Compatibilizers (iii) Agglomeration and (iv) Quaternary recycling of plastics waste. **07**
(b) Define the terms- Plastic Recycling, Commingled Plastics, Purge, Reclaimed materials, Virgin Plastics, Recyclate Plastics. **07**
