

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-V • EXAMINATION – SUMMER 2013****Subject Code: 152303****Date: 21-05-2013****Subject Name: Plastic 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) Enlist the identification symbol of different plastics with their properties and applications **07**

- (b) (i) Define the terms Plastic recycling, Commingled plastics, and Purge. **07**  
(ii) Mention the various applications of recycled PET and HDPE.

**Q.2** (a) Describe the general types of plastic recycling and various steps involved in these processes. **07**

- (b) Give an account on various sources of plastic wastes. How the plastic wastes are collected? **07**

**OR**

- (b) Discuss the recycling of PET using hydrolysis and methanolysis processes. **07**

**Q.3** (a) (i) Write a note on dry distillation process of PMMA. **07**  
(ii) Explain the processes used in recycling of polypropylene.

- (b) Write a short note on secondary recycling of plastic waste. **07**

**OR**

**Q.3** (a) Write a short note on feed stock recovery from plastic wastes. **07**

- (b) Explain the extrusion process used in the recycling of plastic waste. **07**

**Q.4** (a) List the various sources of PVC waste. Discuss the recycling of PVC. **07**

- (b) Write a short note on recycling of medical plastic waste. **07**

**OR**

**Q.4** (a) Explain in detail about biodegradable plastics. **07**

**Q.4** (b) Write a short note on quaternary recycling of plastic waste. **07**

**Q.5** (a) Explain in detail the importance of size reduction techniques in recycling of plastic waste. **07**

- (b) Discuss various stabilizers used for recycled plastics. **07**

**OR**

**Q.5** (a) Enumerate the methods used for the recycling of PET. Explain in detailed about ammonolysis method. **07**

- (b) Write short notes on (i) Contaminants, (ii) Compatibilizers **07**

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