

GUJARAT TECHNOLOGICAL UNIVERSITY**B.E. Sem-III Remedial Examination May 2011****Subject code: 132804****Subject Name: Polymer Chemistry****Date: 20-05-2011****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 Enlist different types of polyolefins. Describe elaborately various techno chemical aspects of polypropylene. **14**

Q.2 (a) Describe techno-chemical aspects of polymethyl methacrylate. **07**

(b) Give synthesis, properties and applications of bakelite. **07**

OR

(b) Describe extrusion and blow moulding processes in detail. **07**

Q.3 (a) Describe in detail the vulcanization process of rubber. **07**

(b) What is addition and substitution reaction? Explain with suitable examples. **07**

OR

Q.3 Give a brief account on the environmental issues of polymers and various methods to reduce the pollution load due to polymers. **14**

Q.4 (a) Describe the manufacturing, properties of polystyrene and applications of polystyrene and its different co-polymers. **08**

(b) Compare in tabular form the physical properties of LDPE with HDPE. **06**

OR

Q.4 Describe in brief chemistry and applications of cellulose and its derivatives. **14**

Q.5 (a) What is polymerization? Explain emulsion polymerization in detail. **07**

(b) What is weight average molecular weight and number average molecular **07**

weight? Determine $M_n = \frac{\sum niMi}{\sum ni}$, $M_w = \frac{\sum niMi^2}{\sum niMi}$

OR

Q.5 (a) Explain the principle, working and applications electron microscopy in polymer characterization. **07**

(b) Explain the principle, working and applications different types of electron microscopy in polymer characterization. **07**
