

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEM-III Examination-Dec.-2011

Subject code: 132804

Date: 13/12/2011

Subject Name: Polymer Chemistry

Time: 2.30 pm -5.00 pm

Total marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

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|-------------|---|-----------|
| Q.1 | (a) What is polymer? Give note on chain polymerization mechanism in detail. | 07 |
| | (b) Explain Solution and Emulsion polymerization with figure. | 07 |
| Q.2 | | |
| | (a) What is Tacticity of polymers? Explain geometry of polymers in detail. | 07 |
| | (b) Discuss step polymerization with three no. of examples. | 07 |
| | OR | |
| | (b) Explain number average and weight average molecular weight in detail and derive related equations. | 07 |
| Q.3 | | |
| | (a) What is amino polymer? Give structure, preparation, properties, important copolymers and uses of it. | 07 |
| | (b) What is viscosity? Explain viscometry technique to determine the polymer molecular weight. | 07 |
| | OR | |
| Q.3 | (a) What is Light scattering ? Discuss this technique with equation. | 07 |
| | (b) Discuss Glass Transition temperature. Explain DTA technique in detail. | 07 |
| Q.4 | | |
| | (a) Describe addition and substitution reaction with examples. | 07 |
| | (b) Explain blow and injection molding to prepare types of articles. | 07 |
| | OR | |
| Q. 4 | (a) Discuss amino and hydrogenation reaction with examples. | 07 |
| | (b) What distinguish between polyamides and polyamines? Explain polyamides and related polymers. | 07 |
| Q.5 | | |
| | (a) What type of awareness for future all over the world we should maintain to minimize the global warming? | 07 |
| | (b) Who invented vulcanization process? Explain vulcanization process in detail. | 07 |
| | OR | |
| Q.5 | (a) Describe thermosetting polymers. Write preparation, properties and uses of melamine formaldehyde crosslink polymer in detail. | 07 |
| | (b) Explain any one spectroscopic technique for testing of polymers. | 07 |
