

GUJARAT TECHNOLOGICAL UNIVERSITY**M.E Sem-I Regular Examination January / February 2011****Subject code: 712407N****Subject Name: Polymer Blends & Alloys****Date: 03 /02/2011****Time: 02.30 pm – 05.00 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) Define and explain the following terms: Co-polymer, graft copolymer , 07
Interpenetrating Polymer Networks,
(b) Define and explain the following terms: Miscible polymer Blend, Immiscible 07
Polymer Blend, compatibilizer, Reactive compatibilization

- Q.2** (a) Describe in detail the advantages and disadvantages of blends 07
(b) Describe in detail the compatibilization mechanism of blend components by 07
reactive compatibilization

OR

- (b) Justify the importance of specific interactions on the miscibility of two 07
polymers. What these specific interactions are ? support your statement with
suitable examples

- Q.3** (a) Explain the difference in flow behavior of miscible and immiscible blends 07
(b) Explain LCST and UCST , why do most polymer blends exhibit LCST rather 07
than UCST

OR

- Q.3** (a) State whether ABS is a blend or alloy and explain in detail about the 07
preparation of ABS with structure and methodology.
(b) Explain the following terms: Chemical compatibilization, Physical 07
compatibilization, reactive compatibilization

- Q.4** (a) Describe the principles and applications of Transmission Electron Microscopy 07
with respect to blends
(b) Describe the advantages of transmission electron microscopy over scanning 07
electron microscopy

OR

- Q.4** (a) Write short notes on blend phase morphology and light microscopy 07
(b) Describe the principles and applications of Scanning Electron Microscopy with 07
respect to blends

- Q.5** (a) What is differential thermal analysis? How it is different from differential 07
scanning calorimetry ?
(b) How to characterize blends using differential thermal analysis? 07

OR

- Q.5** (a) Describe the principles and applications of differential scanning calorimetry 07
with respect to blends
(b) Write short notes on light scattering and its application in polymer blends 07
