

MAJOR TEST - May 2010

PTL 714 : POLYMER BLENDS & ALLOYS

Answer all questions

Max. Marks :100; Time 2 hrs.

- Q.I.** Describe the various theoretical models for compositional dependence of mechanical properties of binary blends, and discuss about the parameters used in these theoretical models to represent the effect of interfacial adhesion in binary blends. [20]
- Q.II.** Distinguish between [30]
- (a) IPNs, graft copolymers and blends
 - (b) Semi-IPN, Simultaneous IPN, Sequential IPN
 - (c) Stress whitening and the whitening produced by shear band formation
- Q.III.** (a) Describe in brief various theories of rubber toughening. [15]
(b) Distinguish between staining by OsO₄ and by RuO₄ [10]
- Q.IV.** Describe briefly the following: [25]
- (a) Under what conditions there occurs a transition from first power to two-thirds power law in a binary polymer blend.
 - (b) Name some commonly used compatibilizers for PP/Polyamide blends
 - (c) Reactive blending
 - (d) Transparency control in PVC/MBS blend
 - (e) Limitation based definition of rubber toughening