

**III B.Tech II Semester Supplementary Examinations,  
November/December 2005  
PLASTICS AND POLYMERIC MATERIALS  
(Metallurgy & Material Technology)**

**Time: 3 hours****Max Marks: 80**

**Answer any FIVE Questions  
All Questions carry equal marks**

\*\*\*\*\*

1. (a) List the advantages and disadvantages of plastics as engineering materials.  
(b) Distinguish between 'addition' and 'condensation' polymerisation reactions. [8+8]
2. what are the different types of structure of polymers? Illustrate with neat sketches and explain how the properties are influenced by the structure. [16]
3. (a) List the raw materials and their sources for polymers.  
(b) What is glass transition temperature and its significance, [8+8]
4. List the important additives to polymers. Write about the functions of each additive [16]
5. Explain about the polymerisation process, raw materials required, manufacture properties and uses of: [2×8=16]  
(a) PVC and  
(b) PMMA
6. (a) Compare and contrast LDPE and HDPE polymers.  
(b) Write about the properties and uses of saturated polyesters. [8+8]
7. (a) Distinguish between amorphous, semi crystalline and crystalline polymers.  
(b) Explain about the effects of time, temperature catalysts and solvents on properties of polymers. [8+8]
8. Write short notes on: [4×4=16]  
(a) Effect of aromatic functional group in the main chain on stiffness, structure and Tg.  
(b) Antioxidants  
(c) Stabilisers  
(d) Polycarbonates.

\*\*\*\*\*