

11137 : Elective - I : Polymer Blends and Composites : 7 PP 04

P. Pages : 2

Time : Three Hours



* 0 2 6 0 *

AW - 3386

Max. Marks : 80

- Notes :
1. All question carry marks as indicated.
 2. Answer **three** question from Section A and **three** question from Section B.
 3. Due credit will be given to neatness and adequate dimensions.
 4. Assume suitable data wherever necessary.
 5. Diagrams and chemical equations should be given wherever necessary.
 6. Illustrate your answer necessary with the help of neat sketches.
 7. Discuss the reaction, mechanism wherever necessary.
 8. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION - A

1. a) What are the advantages of polymer blends and alloy? Give the features of polymer blends. 6
b) What is the criteria for compatibility of polymer blend? Why the polymer blend should be semi compatible? 7

OR

2. a) Explain in detail any one of the method of polymer blend preparation. 6
b) Explain in detail the compatibilization mechanism of polymer blends. 7
3. Discuss in detail the toughening mechanism in elastomer modified blend, with the help of suitable example. 14

OR

4. a) Explain in detail the transition behaviour of polymer blends. 7
b) Explain in detail the shear yielding and crazing phenomenon in polymer blends. 7
5. Discuss the preparation, processing of following polymer blends : 13
 - i) Synthetic paper polymer blend
 - ii) Rubber-Rubber polymer blend
 - iii) Multilayer co-extrusion blend

OR

6. Discuss the preparation, properties and processing of following polymer blend:- 13
 - i) PC + PET
 - ii) PPO + PS
 - iii) Wood plastic polymer blend

7. a) What are the different fundamentals of composite? Discuss their role in composition preparation. 8
- b) Explain with neat sketch the different type of orientation of fiber in composite. 5

OR

8. Explain in detail the classification of composite on the basis of origin, type of matrix and reinforcement. 13
9. Explain in detail the glass fiber manufacturing process with types of glass fiber and properties of glass fibers. 14

OR

10. a) Discuss the following processing techniques:- 10
- i) Pultrusion ii) Filament Winding
- b) Differentiate between open molding and close molding. 4
11. Discuss in detail the applications of polymer composite in following fields:- 13
- i) Chemical Industry ii) Aerospace
- iii) Automobile

OR

12. a) Discuss the designing aspects in composite hollow article with respect to drafts, flanges etc. 8
- b) Discuss defects/faults and remedies in polymer composite. 5
