

Day: Friday
Date: 31/05/2019

S-2019-2711

Time: 02.30 PM TO 05.30 PM
Max. Marks: 60

N.B:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Assume suitable data if necessary.

Q.1 What is the mechanism of chain growth and step growth polymerization? (10)

OR

- Q.1** a) What is the difference between homo polymer and hetero polymer? (05)
b) How polymer liquids and solids are different? (05)

- Q.2** a) How variation in polymer morphology affects polymer properties and its applicability? (05)
b) How chemical bonding in polymers affect the properties and applicability? (05)

OR

- Q.2** a) What are the effects of presence of functionality on polymer properties and applicability? (05)
b) How stereoisomerism affects polymer properties and applicability? Explain with an example. (05)

Q.3 Which are the different techniques of polymerization? What are the factors which must be considered while selection of polymerization technique for particular application? Explain based on merits and limitations. (10)

OR

Q.3 What is copolymerization? Derive and explain the factors affecting degree of polymerization for copolymerization. (10)

- Q.4** a) Which are the factors influencing polymer microstructure based on geometrical structure? What is their effect on polymer properties and applicability? (05)
b) What is plasticizer? How does presence of plasticizer affect polymer property and applicability? (05)

OR

- Q.4** a) Which are the factors influencing chemical structure of polymer? How do they affect polymer properties and applicability? (05)
b) How does crystallinity affect polymer properties and applicability? (05)
- Q.5** a) Which are the factors affecting selection of polymers for blending? How they affect polymer miscibility and applicability? (05)
b) What is long fiber reinforced composite? How it improves polymer property and applicability? (05)

OR

- Q.5** a) What is the necessity for formation of composite? Explain the property improvement and applicability. (05)
b) How rubber polymer blends are formed? What is their significance? (05)
- Q.6** a) Which are different compounding ingredients for rubber and plastic? How they affect the property and applicability? (05)
b) What is the principle behind transfer molding? Explain its operation and applicability. (05)

OR

- Q.6** a) What is the need for cross linking? How it affects polymer properties and applicability? (05)
b) What is the applicability of reaction injection molding? Explain with principle and working. (05)