Day: **Monday**	**S-2018-2391**	Time: **02.30 PM TO 05.30 PM**
Date: **11/06/2018**		Max Marks. 60

N.B.

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Use to the non - programmable **CALCULATOR** is allowed.
4) Neat diagrams must be drawn **WHEREVER** necessary.
5) Assume suitable data if **NECESSARY**.

Q.1 **a)** What is reaction mechanism for step growth & chain growth polymerization? Explain the same. **(07)**

b) What is polymer microstructure? How it affects polymer properties. **(03)**

OR

a) Why monomers called as building block of polymer? Explain their importance in details. **(07)**

b) How properties of polymer solids differ from polymer liquids? **(03)**

Q.2 What are different type of molecular weights used for polymers? Explain in details. **(10)**

OR

How chemical bonding and presence of functionality affects polymer properties? **(10)**

Q.3 Derive the kinetics of radical polymerization and explain how polymer molecular weight depends upon initiator concentration? **(10)**

OR

What is anionic polymerization? Derive a correlation and explain how polymer molecular weight depends upon monomer concentration? **(10)**

Q.4 How chemical and geometrical structure affects polymer properties? Explain in details. **(10)**

OR

What is glass transition temperature? Which factors affects polymer's glass transition temperature? Explain in detail. **(10)**

Q.5 **a)** What is polymer eutectics? Explain its significance. **(05)**

b) What are rubber – rubber blends? Explain its importance with an example. **(05)**

OR

What is difference between miscible and immiscible blends? Explain the thermodynamics behind miscibility. **(10)**

Q.6 What is rubber crosslinking & vulcanization? Explain its significance and applicability. **(10)**

OR

a) What is transfer molding? Explain its importance and applications. **(05)**

b) What is pultrusion? How it works? Explain its applications. **(05)**

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