Master level/ M.Sc. (Physics)/4ᵗʰ Semester	Full Marks: 37.5
Time: 3 hrs	Pass Marks: 18.75

Subject : Material Science-II (PHY655)

Candidates are required to give their answer in their own words as far as Practicable. The figures in the margin indicate full marks.

Attempt all the questions:

1. Define polymer. Discuss some properties of polymer. Also explain the mathematical expression of the polymer-polymer system. [10]

2. What do you mean by good solvent? Discuss about the dynamic scaling in good solvent of single chain. [10]

OR

State and explain the general understanding of an ideal chain on the basis of conformation.

3. Discuss the Flory calculation of the exponent γ and express in terms of dimensionality. [5]

OR

Explain the theoretical formulation of restricted polymer solutions.

4. Define segregation. Discuss the general principles of incompatibility. [5]

5. Explain the longitudinal modes of many chain systems. Also discuss about the coefficient associated with it. [5]

6. Write the short notes on the physical phenomena for the combination of two polymers and one solvent. [2.5]

OR

Discuss the problems of internal friction.

The End