

SHRI RAMSWAROOP MEMORIAL UNIVERSITY

End Semester Examination (2021-22)-Odd Semester

M.Sc. (Physics) – II Year (III Sem)

Course Name: Physics of Materials

Code: MPH 3001

Time: 02 Hours

Max Marks: 60

University Roll No.

(To be filled by the Student)

Note: Please read instructions carefully:

- The question paper has 03 sections and it is compulsory to attempt all sections.
- All questions of Section A are compulsory; questions in Section B and C contain choice.

Section A: Very Short Answer type Questions		BL	CLO	Marks (10)
Attempt all the questions.				
1.	Give the name a few mechanical properties of materials.	BL1	CLO1	02
2.	Explain the term fatigue.	BL2	CLO1	02
3.	What do you know about polarizability?	BL1	CLO2	02
4.	Interpret the hysteresis.	BL2	CLO3	02
5.	Why do semiconductors with band gap less than 1.8 eV opaque to visible light?	BL1	CLO4	02
Section B: Short Answer Type Questions		BL	CLO	Marks (30)
Attempt any 03 out of 05 questions.				
1.	Explain the effect of Heat treatment on the mechanical properties of the materials.	BL4	CLO1	10
2.	Illustrate the ferroelectricity in the materials.	BL4	CLO2	10
3.	Explain the antiferromagnetism in the magnetic materials.	BL4	CLO3	10
4.	Discuss about hard magnetic materials.	BL4	CLO3	10
5.	Describe the phenomenon of photoconductivity in the materials.	BL4	CLO4	10
Section C: Long Answer Type Questions/Case Study		BL	CLO	Marks (20)
Attempt any 01 out of 04 questions.				
1.	What is the diffusion? Illustrate the non-steady state diffusion.	BL4	CLO1	20
2.	How will you define molecular field? Develop Clausius-Mossatti relation for the dielectric materials.	BL4	CLO2	20
3.	Illustrate the Langevin theory of diamagnetism.	BL4	CLO3	20
4.	Discuss about liquid crystal display and compare it with LED display.	BL4	CLO4	20