

P-114

Total Pages : 3

Roll No.

MSCPH-552

Material Science

M.Sc. Physics (MSCPH)

4th Semester Examination, 2023 (June)

Time : 2 Hours]

Max. Marks : 70

Note : This paper is of Seventy (70) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein. Candidates should limit their answer to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

SECTION–A

(Long Answer Type Questions)

Note : Section 'A' contains Five (05) long answer type questions of Nineteen (19) marks each. Learners are required to answer any Two (02) questions only.

(2×19=38)

1. Explain the Strengthening of metals. Give the different methods of Strengthening metals.

2. Why mechanical properties of ceramics are significant? Give some important mechanical properties of ceramics.
3. What are nanomaterials? Give some important properties of nanomaterial.
4. What do you mean by Crystal Growth? Give some crystal growth techniques and explain any one Crystal Growth technique.
5. Give different Methods of Fabricating Thin Films and explain Magnetron Sputtering Method.

SECTION-B

(Short Answer Type Questions)

Note : Section 'B' contains Eight (08) short answer type questions of Eight (08) marks each. Learners are required to answer any Four (04) questions only. (4×8=32)

1. Define fracture in the case of metals. How many types of fractures are possible in metals?
2. Define melting point T_m , and glass transition temperature T_g of Polymer. Give the Factor affecting the glass transition temperature.

3. What is Physical Vapour Deposition (PVD) coating?
 4. What is the basic principle of zone refining of metals?
 5. Explain an experimental procedure for finding the XRD pattern.
 6. What are the advantages of the Scanning electron microscope (SEM) over optical microscopy?
 7. What is Raman spectroscopy? What's the time needed to obtain a Raman spectrum?
 8. Discuss the principle behind ESR spectroscopy. What types of species are studied by this technique?
-

