

Roll No.

Y – 3126

M.Sc. (Fourth Semester) EXAMINATION, May/June-2021

PHYSICS

Paper – 404-B

MATERIAL SCIENCE-II

Time : Three Hours

Maximum Marks : 85

Minimum Pass Marks : 29

Note—Attempt *all* questions.

Unit-I

1. Give some of the important applications of dislocations. Explain homogenous nucleation of dislocation. 17

Unit-II

2. Explain the mechanism of oxidation and oxidation resistant materials. 17

Unit-III

3. Explain the mobility of charge carrier. How it depends upon temperature ? 17

Unit-IV

4. Discuss the dielectric function of an electron gas in random phase approximation. 17

Unit-V

5. Write short notes on any two of the following— 17
- (i) Creeps and their mechanism.
 - (ii) Plasma oscillations in free electron gas.
 - (iii) Scattering of electrons by phonons.
 - (iv) Correlation energy.
 - (v) Electrical conductivity of metals.

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