

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2018
(Second Semester)

Branch – PHYSICS

CONDENSED MATTER PHYSICS

Time : Three Hours

Maximum : 75 Marks

Answer ALL questions
ALL questions carry EQUAL marks (5 x 15 = 75)

- 1 a Derive the Laue equations for X-ray diffraction.
OR
b Explain the concept of Brillouin zone with the help of diagram.
- 2 a Explain the construction of Fermi surface on the basis of Hass-Van Alphen effect.
OR
b Discuss the Kronig – Penney model for energy band in solids.
- 3 a State imperfection and its types. Explain Dislocation and mechanical strength of metals.
OR
b Distinguish between type I and type II super conductors and write a note on tunneling effect.
- 4 a Obtain an expression Debye's theory of specific heat capacity.
OR
b Define static dielectric constant of a solid. How it can be determined? Explain its frequency dependence?
- 5 a Derive an expression on Langevin theory of Para Magnetism.
OR
b Explain NMR and Para and Ferro magnetic resonance.

Z-Z-Z

END