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AF-3505

M.Sc. (Final)
Term End Examination, 2017-18

PHYSICS

Paper - I

Condensed Matter Physics & Nuclear and Particle Physics

Time : Three Hours] [*Maximum Marks* : 100
[*Minimum Pass Marks* : 36

Note : Answer **five** questions in all, selecting at least **two** questions from each Section. All questions carry equal marks.

Section - A

1. Write the difference between crystalline and amorphous solid and explain Bravais lattice in three-dimension in detail.

2. Explain the concept of Reciprocal lattice and discuss its application in detail.

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3. Explain the X-ray and electron microscopic techniques of material characterization and compare them.

4. What do you mean by cyclotron resonance ? Explain in detail.

5. Describe about Weiss theory of Ferromagnetism.

Section - B

6. Write short notes on the following :

(*a*) Nucleon-Nucleon Scattering

(*b*) Spin dependence of Nuclear forces

7. Describe liquid drop model of a nucleus. Explain fission by liquid drop model.

8. Describe about Breit-Wigner one level formula in detail.

9. Write about Fermi theory of Beta decay.

10. Write short notes on the following :

(*a*) Nuclear Isomerism

(*b*) Hadrons and Leptons

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