

B.Sc. Semester - 5 (Remedial) (NEP-2020) Examination**March/April-2026****PHY: Nuclear & Particle Physics (Major-12)****Time: 2:00 Hours****Marks:50****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

-
- Que.1 Answer any 2 out of 3 of the following questions. (10)
- (1) Write a Short note on the Shell model.
 - (2) What is Binding energy? Explain it.
 - (3) Discuss about Rutherford Experiment for artificial transmutation.
- Que.2 Answer any 2 out of 3 of the following questions. (10)
- (1) Discuss about Atom bomb.
 - (2) Write a note on Nuclear Reactors.
 - (3) Explain – Thermo nuclear reaction.
- Que.3 Answer any 2 out of 3 of the following questions. (10)
- (1) Explain about Particles and Anti-Particles.
 - (2) Discuss in short the fundamental interactions.
 - (3) Write a short note on the quark model.
- Que.4 Answer any 2 out of 3 of the following questions. (10)
- (1) What is natural radio activity? Write the properties of alpha rays.
 - (2) Explain the Law of Radioactive decay.
 - (3) Write a note on the mean life.
- Que.5 Answer any 5 out of 5 of the following questions. (10)
- (1) Write about Nuclear size.
 - (2) Explain Classification of Nuclei.
 - (3) What is Conservation of parity?
 - (4) Write in short for the standard model.
 - (5) Write uses of Nuclear reactors.
 - (6) What is nuclear fusion?
 - (7) Write Units of activity (Radioactivity).
 - (8) What is age of the Earth?
