M.Sc. DEGREE EXAMINATION,ODD SEMESTER 2020
II Year and III Semester
Nuclear Physics and Particle Physics

Max.marks :25

Answer any **FIVE** questions $(5 \times 5 = 25)$ Marks

1. Give a brief account of meson theory of nuclear forces.
2. Discuss the conservation laws of nuclear reaction.
3. Explain the Bohr-Wheeler theory of nuclear fission.
4. Discuss the main features of collective model of the nucleus.
5. Discuss the various types of interactions between elementary particles.
6. Explain nuclear isomerism.
7. Calculate the Q value for the reaction ${}_7N^{14}+{}_2He^4$ ${}_8O^{17}+{}_1H^1+Q$

   The atomic masses of the particles are :${}_7N^{14}$=14.003074, ${}_2He^4$=4.002604, ${}_8O^{17}$=16.99913 and ${}_1H^1$=1.007825 a.m.u.