

B.A./B.Sc. - 6th Semester
(2721)

Paper : Physics Paper-A (Radiation & Particle Physics)

Time allowed: 2 hrs.

Max. Marks: 35

Note: There are EIGHT questions of equal marks. Candidates are required to attempt any FOUR questions.

Section -A

1. Derive a relation between angle of scattering photon and that of recoiling electron for Compton scattering process.
2. What is Compton effect? Derive an expression for Compton shift.

Section -B

3. What is Cernkov radiation? Discuss the utility of this phenomena in detecting of high energy particles. What are the characteristics of Cernkov detectors?
4. Discuss in detail the principle of operation of proportional counter. Describe its construction.

Section -C

5. Give principle, construction and working of a linear accelerator. What are its disadvantages?
6. What is a synchrotron? Give a detailed account of construction and working of electron synchrotron and proton synchrotron.

Section -D

7. Discuss Gell-Mann-Nishijima scheme of classification of particles.
8. What are quarks? Give quark model of mesons, protons, anti-protons, neutrons and anti-neutrons.

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