Roll No. | | | | | | | | | | | | **Total No. of Pages: 02**

Total No. of Questions: 07

Bachelor of Science (Computer Science)(Sem. – 6)

PARTICLE PHYSICS

M Code: 72784

Subject Code: BCS-604

Date of Examination : 05-01-2023

Time: 3 Hrs. **Max. Marks: 60**

INSTRUCTIONS TO CANDIDATES:

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.**

SECTION-A

1. Write briefly:

   a) What are Baryons?

   b) Why a cyclotron cannot accelerate electrons?

   c) What is the principle of proportional counter?

   d) What is a photomultiplier tube?

   e) What are the advantages of Scintillation Counter?

   f) What are fundamental interactions?

   g) What is pair production?

   h) Give four conservation laws observed by elementary particle.

   i) What do you understand by isospin?

   j) Give principle of synchrotrons?

SECTION-B

2. Describe the principle, construction and working of linear accelerator.

3. What are quarks? Explain the quark model. Also give two factors which do not support the existence of quarks.

4. Describe principle, construction and working of Geiger-Muller Counter.

5. Explain the following gamma-ray interaction process:

   a) Photoelectric effect

   b) Compton scattering

6. Describe principle, construction and working of a cyclotron.

7. Give the classification of elementary particles. Also give the statistics that each group of particle obeys.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.