M.Sc.(Physics) Fourth Semester Old

MSC24102 - Nuclear & Particle Physics-II Paper – II

P. Pages : 1 **GUG/W/18/2418**

Time : Three Hours * 1 8 9 0 * Max. Marks : 80

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1. Either

a) Discuss conservation of energy and momentum during fundamental interactions. **8**

b) Discuss gravitational and strong interactions. **8**

OR

e) Discuss Su (3) Symmetry for elementary particles an Hence explain Gell- Mann- Okubo mass formula. **8**

f) Explain Baryone and mesons multiples. **8**

2. Either

a) Explain quantum number assigned to elementary particles in detail. **8**

b) What is Gell-Mann-Nishijima formula? Explain it. **8**

OR

e) What is Quark hypothesis? Discuss types of Quarks. **8**

f) Explain standard model for electro weak unification. **8**

3. Either

a) Discuss briefly on ionisation chambers and proportional counters. **8**

b) Explain working of Geiger muller counter. **8**

OR

e) Explain working of inorganic scintillator counter and its efficiency. **8**

f) Write on high energy particle detector with neat labelled diagram. **8**

4. Either

a) What is Betatron? Explain its working. **8**

b) Discuss electrostatic and cyclic accelerators. **8**

OR

e) Discuss construction and working of linear accelerator. **8**

f) Discuss construction and working of high energy accelerator. **8**

5. Answer all the followings

a) Explain baryon, mesons and leptons. **4**

b) Explain iso spin and strangeness. **4**

c) Discuss properties of neutrino. **4**

d) Write on particle acceleration by e. m. wave. **4**

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