Shree H.N.Shukla group of colleges

PHYSICS

T.Y.B.Sc. (Sem. VI) (CBCS)

QUESTION BANK

PAPER- 601

SECTION-A

Q.1: One marks questions: **[5 MARKS]**

1 The ionisation power of α particle is _____ time greater than β rays.

2 The _____ particle are identical with electron.

3 The unit of radioactivity is _____.

4 The β particle have _____ charges.

5 Write equation of Half life time :

6 The ionisation power of α particle is _____ time greater than β rays.

7 The _____ particle are identical with electron.

8 The unit of radioactivity is _____.

9 The β particle have _____ charges.

10 Write equation of Half life time :

11 The ionisation power of α particle is _____ time greater than β rays.

12 The _____ particle are identical with electron.

13 The unit of radioactivity is _____.

14 The β particle have _____ charges.

15 Write equation of Half life time :

SECTION – B

Q.2 (A): Short Questions: **[2 Marks each]**

1 What is the mass of 1 Curie of U^{238}

2 A radioactive substance has half life of 30 days . Claculate the radioacitve disintegraiton constant.

3 A radioactive substance has half life of 50 days . Find the radioactive decay constant and mean llife.

4 Write two reaction of (α, p).

5 Write two reaction of (n , Υ).

6 Write any two reaction by alpha particles.

7 What are called magic numbers ?

8 Binding energy of SC is 424.326 MeV find binding energy per nucleaon.

9 Explain : Mirror Nuclei.

Q.2 (B) : Short questions: [3 Marks each]

1 Write properties of APLHA rays.

2 Write properties of GAMMA rays.

3 Explain the radioactive THORIUM series.

4 Discuss : Binding energy.

5 Explain : Nuclear size.

6 Define : Nuclear density.

7 Explain the working of solid state detector.

8 Describe the characterisitics of GM counter.

9 Explain Photomultiplier.

Q.2 (C): Write Detail Note ON : [5 Marks each]

1 Explain Half life and Mean life .

2 Explain the application of Radio isotope.

3 Describe the theory of ALPHA decay.

4 Explain natural radioactivity series.

5 Describe the interaction between energetic particle and matter.

6 Obtain the Q value for nuclear reaction.

7 Explain nuclear transmuation.

8 Explain conservation laws in nuclear reaction.

9 Describe Rutherford alpha scattering experiment.

10 Describe classification of nuclei.

11 Explain qualitative facts about size , mass and charge of nucleas.

12 Write semiempirical mass formullaznd explain its terms.