



Shree H.N. Shukla group of colleges

PHYSICS

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

Unit Test examination

PAPER- 601

UNIT - 1 : GENERAL LAWS OF NUCLEAR PHYSICS

DATE :

TOTAL MARKS : 30

Instructions: All questions are compulsory.

The right side figure indicates total marks of the question.

Draw the figure wherever necessary.

Write answers of all the questions in main answer sheets.

SECTION-A

Q.1: One marks questions:

[5 MARKS]

- 1 Protons and neutrons jointly called _____.
- 2 Nuclear mass/ Nuclear volume = _____.
- 3 The nuclei having even number of proton and even number of neutrons are called _____ nuclei.
- 4 In semiempirical mass formula the surface term _____.
- 5 Define : Isobar

SECTION – B

Q.2 (A): Short Questions: Write all three : [2 Marks each]

[6 MARKS]

- 1 What are called magic numbers ?
- 2 Binding energy of ^{238}U is 424.326 MeV find binding energy per nucleon.
- 3 Explain : Mirror Nuclei.

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

[9 MARKS]

- 1 Discuss : Binding energy.
- 2 Explain : Nuclear size.
- 3 Define : Nuclear density.

Q.2 (C): Write Detail Note on [Any two]: [5 Marks each]

[10 MARKS]

- 1 Describe Rutherford alpha scattering experiment.
- 2 Describe classification of nuclei.
- 3 Explain qualitative facts about size , mass and charge of nucleus.
- 4 Write semiempirical mass formula and explain its terms.