



TARGET : NEET (UG) 2024

Course : SARANSH (Youtube Live CRASH COURSE)

PHYSICS

**DPP**

DAILY PRACTICE PROBLEMS

**DPP NO. 2**

**PHYSICS: NUCLEAR PHYSICS**

**DPP No. : 2**

- When a  $\beta^-$ -particle is emitted from a nucleus, the neutron-proton ratio :  
 (1) is decreased                      (2) is increased                      (3) remains the same                      (4) first (A) then (B)
- The energy equivalent of 1 kilogram of matter is about  
 (1)  $10^{-15}$  J                      (2) 1 J                      (3)  $10^{-12}$  J                      (4)  $10^{17}$  J
- In helium nucleus, there are  
 (1) 2 protons and 2 electrons  
 (2) 2 neutrons, 2 protons and 2 electrons  
 (3) 2 protons and 2 neutrons  
 (4) 2 positrons and 2 protons
- If the mass number of an atom is  $A = 40$  and its electron configuration is  $1s^2, 2s^2, 2p^6, 3s^2, 3p^6$ , the number of neutrons and protons in its nucleus will be  
 (1) 22, 18                      (2) 18, 22                      (3) 20, 20                      (4) 18, 18
- $\alpha$ -particles of energy 400 KeV are bombarded on nucleus of  ${}_{82}\text{Pb}$ . In scattering of  $\alpha$ -particles, its minimum distance from nucleus will be  
 (1) 0.59 nm                      (2) 0.59 Å                      (3) 5.9 pm                      (4) 0.59 pm
- A heavy nucleus at rest breaks into two fragments which fly off with velocities in the ratio 8 : 1. The ratio of radii of the fragments is  
 (1) 1 : 2                      (2) 1 : 4                      (3) 4 : 1                      (4) 2 : 1
- For uranium nucleus how does its mass vary with volume  
 (1)  $m \propto V$                       (2)  $m \propto 1V$                       (3)  $m \propto \sqrt{V}$                       (4)  $m \propto V^2$
- Which of the following particles are constituents of the nucleus  
 (1) Protons and electrons                      (2) Protons and neutrons  
 (3) Neutrons and electrons                      (4) Neutrons and positrons
- Radius of  ${}^4_2\text{He}$  nucleus is 3 Fermi. The radius of  ${}^3 \rightarrow 2$  nucleus will be  
 (1) 5 Fermi                      (2) 6 Fermi                      (3) 11.16 Fermi                      (4) 8 Fermi
- The sodium nucleus  ${}^{23}_{11}\text{Na}$  contains  
 (1) 11 electrons                      (2) 12 protons                      (3) 23 protons                      (4) 12 neutrons