

PYQSide

NEET ATOMS — DISTANCE OF CLOSEST APPROACH AND IMPACT PARAMETER — PYQS

Max. Marks: 12

Questions: 3

Section A (MCQ)

Q.1 When an α -particle of mass m moving with velocity v bombards on a heavy nucleus of charge Ze , its distance of closest approach from the nucleus depends on m as [NEET 2016 (Phase 1)]

- (1) $\frac{1}{m^2}$ (2) m (3) $\frac{1}{m}$ (4) $\frac{1}{\sqrt{m}}$

Scan or tap for the full solution



Q.2 An alpha nucleus of energy $\frac{1}{2}mv^2$ bombards a heavy nuclear target of charge Ze . Then the distance of closest approach for the alpha nucleus will be proportional to [AIPMT 2010 (Prelims)]

- (1) $\frac{1}{Ze}$ (2) v^2 (3) $\frac{1}{m}$ (4) $\frac{1}{v^4}$

Scan or tap for the full solution



Q.3 In a Rutherford scattering experiment when a projectile of charge z_1 and mass M_1 approaches a target nucleus of charge z_2 and mass M_2 , the distance of closest approach is r_0 . The energy of the projectile is [AIPMT 2009]

- (1) directly proportional to $z_1 z_2$
 (2) inversely proportional to z_1
 (3) directly proportional to mass M_1
 (4) directly proportional to $M_1 \times M_2$

Scan or tap for the full solution



ANSWER KEY

Ques.	1	2	3								
Ans.	3	3	1								