

# PYQSide

## JEE MAIN NUCLEI — SIZE OF THE NUCLEUS — PYQS

Max. Marks: 16

Questions: 4

### Section A (MCQ)

- Q.1** An atom  ${}^8_3\text{X}$  is bombarded by shower of fundamental particles and in 10 s this atom absorbed 10 electrons, 10 protons and 9 neutrons. The percentage growth in the surface area of the nucleus is recorded by :

[JEE Main 2026 (Online) 28th January Morning Shift]

- (1) 150%    (2) 900%    (3) 125%    (4) 225%

Scan or tap for the full solution



- Q.2** A nucleus has mass number  $\alpha$  and radius  $R_\alpha$ . Another nucleus has mass number  $\beta$  and radius  $R_\beta$ . If  $\beta = 8\alpha$  then  $R_\alpha/R_\beta$  is :

[JEE Main 2026 (Online) 28th January Evening Shift]

- (1) 1    (2) 2    (3) 8    (4) 0.5

Scan or tap for the full solution



- Q.3** For a nucleus of mass number  $A$  and radius  $R$ , the mass density of nucleus can be represented as

[JEE Main 2025 (Online) 8th April Evening Shift]

- (1)  $A^{\frac{2}{3}}$     (2) Independent of  $A$   
(3)  $A^3$     (4)  $A^{\frac{1}{3}}$

Scan or tap for the full solution



- Q.4** Given below are two statements: one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.

**Assertion (A):** The density of the copper ( ${}^{64}_{29}\text{Cu}$ ) nucleus is greater than that of the carbon ( ${}^{12}_6\text{C}$ ) nucleus.

**Reason (R):** The nucleus of mass number  $A$  has a radius proportional to  $A^{1/3}$ .

In the light of the above statements, choose the **most appropriate answer** from the options given below :

[JEE Main 2025 (Online) 7th April Evening Shift]

- (1) (A) is correct but (R) is not correct  
(2) Both (A) and (R) are correct but (R) is not the correct explanation of (A)  
(3) (A) is not correct but (R) is correct  
(4) Both (A) and (R) are correct and (R) is the correct explanation of (A)

Scan or tap for the full solution



### ANSWER KEY

| Ques. | 1 | 2 | 3 | 4 |  |  |  |  |  |  |  |
|-------|---|---|---|---|--|--|--|--|--|--|--|
| Ans.  | 3 | 4 | 2 | 3 |  |  |  |  |  |  |  |