

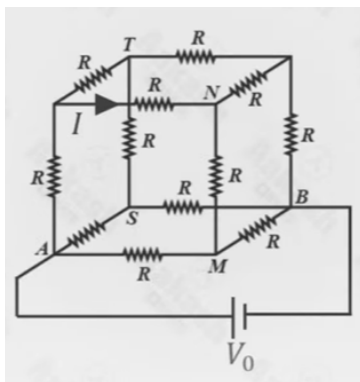
JEE Main 2024 Physics Question Paper April 4 Shift 1

Ques 1. Five identical convex lenses are placed one after the other in close contact. The power of this arrangement is 25 D. Then, the power of one such lens is

- A. 10 D
- B. 5 D
- C. 125 D
- D. 20 D

Ans. B

Ques 2. A cubical arrangement of 12 resistors each having resistance R is shown. Find I .



- A. $V_0/3R$
- B. $V_0/6R$
- C. $V_0/4R$
- D. $V_0/8R$

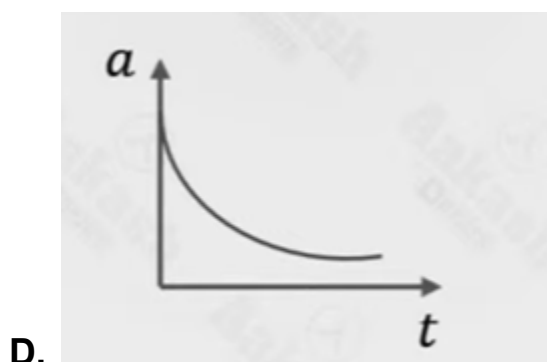
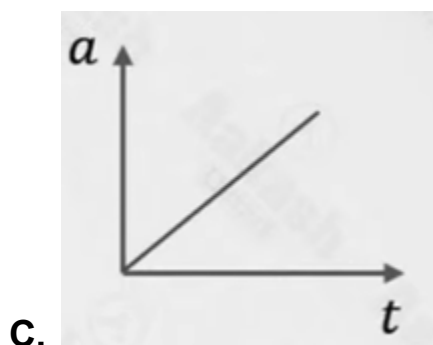
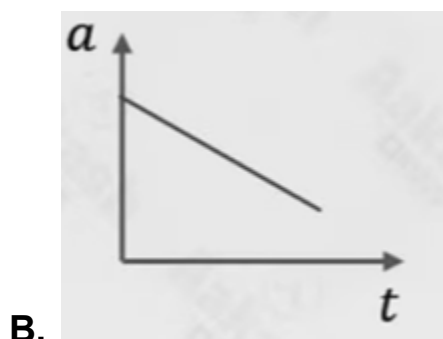
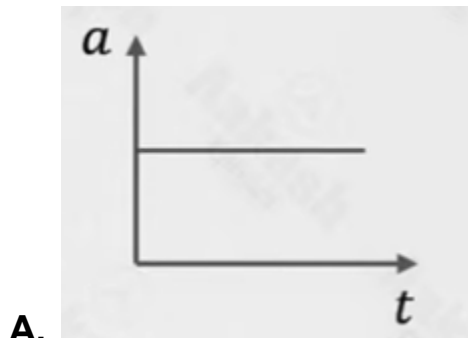
Ans. B

Ques 3. On a given rough incline plane, a solid sphere and a hollow cylinder having the same radius are rolled one by one, with the same speed. Ratio of heights attained by solid sphere and hollow cylinder is

- A. 9/10
- B. 3/10
- C. 7/10
- D. 6/10

Ans. C

Ques 4. A wooden block is initially at rest on a smooth surface. Now a horizontal force is applied on the block which increases linearly with time. The acceleration- time ($a - t$) graph for the block would be



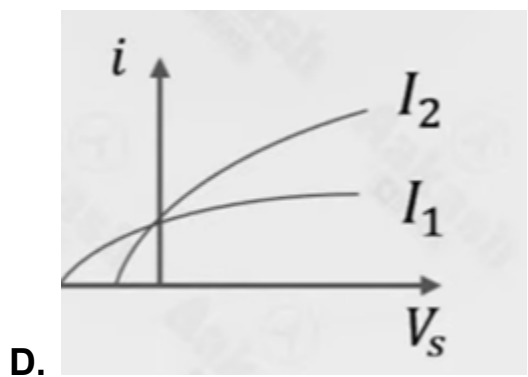
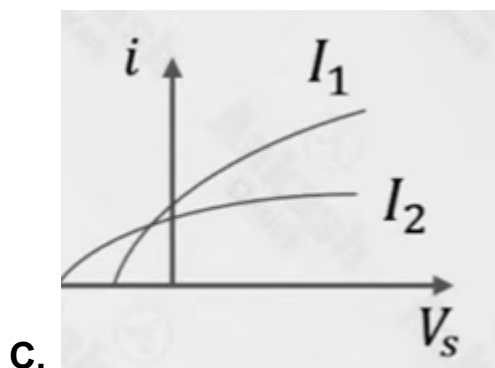
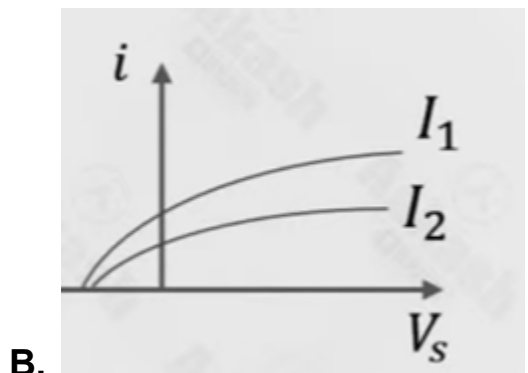
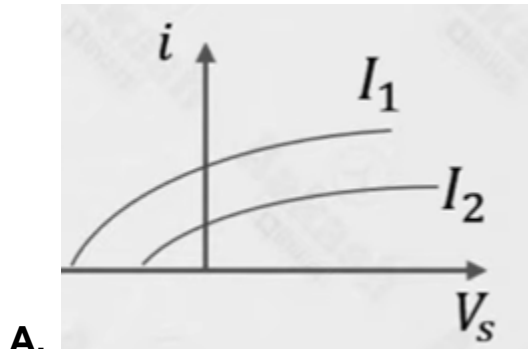
Ans. C

Ques 5. An electron is projected along the axis of solenoid which carries constant current i , the trajectory of electron shall be

- A. Circular path
- B. Uniform motion along the axis
- C. Uniform accelerated motion in straight line
- D. Parabolic path

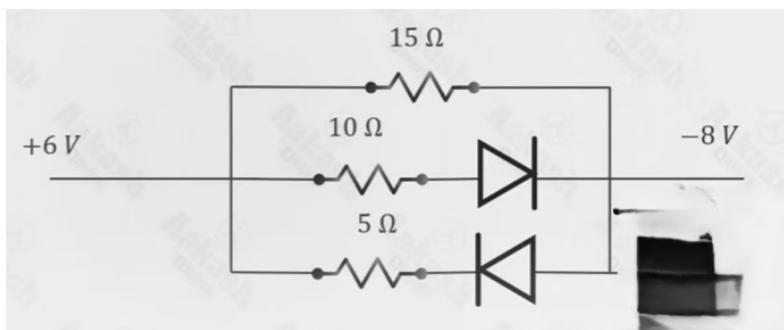
Ans. B

Ques 6. Which graph correctly represents the photo current (i) vs stopping potential (V_s) for the same frequency but different intensity? (here, $I_1 > I_2$)



Ans. B

Ques 7. Consider the network shown:



The equivalent resistance of the network is

- A. $12\ \Omega$
- B. $36\ \Omega$
- C. $20\ \Omega$
- D. $6\ \Omega$

Ans. D

Ques 8. Instantaneous current in a circuit is $i(t) = [6 + \sqrt{54} \sin(2\pi t + \pi/3)]$ A RMS value of current is

- A. $2\sqrt{6}$ A
- B. 7A
- C. $3\sqrt{7}$ A
- D. $6\sqrt{2}$ A

Ans. C

Ques 9. The equation of stationary wave is given as $y = 2A \sin(2\pi/\lambda \cdot nt) \cos(2\pi/\lambda \cdot x)$, then which of the following is not correct.

- A. Dimension of x is [L]
- B. Dimension of n is $[LT^{-1}]$
- C. Dimension of n/λ is [T]
- D. Dimension of nt is [L]

Ans. C

Ques 10. Because of force (separately) of 3 N & 2 N, elongation in spring are found to be 'a' and 'b' unit respectively then $(2a - 3b)$ is.

Ans. 0