



JEE (MAIN) 2026

MEMORY BASED QUESTIONS & TEXT SOLUTION

SHIFT-1

DATE & DAY: 24th January 2026 & Saturday

PAPER-1

Duration: 3 Hrs.
Time: 09:00 – 12:00 IST

SUBJECT: PHYSICS

Selections in JEE (Advanced)/
IIT-JEE Since 2002

52979

Classroom: 35901 | Distance: 17078

Selections in JEE (Main)/
AIEEE Since 2009

262693

Classroom: 194471 | Distance: 68222

Selections in NEET (UG)/
AIPMT/AIIMS Since 2012

22733

Classroom: 15409 | Distance: 7324

Admission Open for 2026-27

Target: JEE (Advanced) | JEE (Main) | NEET (UG) | PCCP (Class V to X)

100% Scholarship on the basis of Class 10th, 12th
& JEE (Main) 2026 %ile / AIR

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PART : PHYSICS

1. A spring of stiffness $k = 15 \text{ N/m}$ is cut into a ratio of 3: 1. Find the spring constant of smaller length spring thus formed.

(1) 45 N/m (2) 60 N/m (3) 15 N/m (4) 30 N/m

Ans. (2)

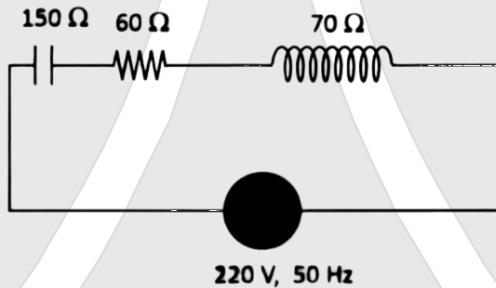
2. EM waves and their source are given

Column - I	Column - II
(a) X-rays	(p) Hot bodies and molecules
(b) Infrared Rays	(q) Oscillatory current in Antenna's
(c) Microwaves	(r) Magnetron
(d) Radio waves	(s) Fast moving electrons striking a metal plate

(1) a - p, b - s, c - r, d - q (2) a - s, b - p, c - r, d - q
 (3) a - s, b - p, c - s, d - q (4) a - s, b - r, c - p, d - q

Ans. (2)

3. For the given ac circuit, find the power factor.



(1) 4/5 (2) 3/4 (3) 4/3 (4) 3/5

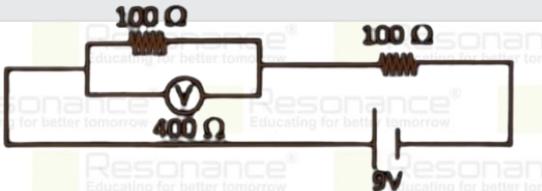
Ans. (4)

4. In H-like atom ratio of speed in two orbits is 3: 2, then ratio of energy is

(1) 5:3 (2) 2:1 (3) 9:4 (4) 2:3

Ans. (3)

5. A voltmeter of 400Ω resistance is in parallel with 100Ω resistor. And the combination is connected with 100Ω resistor and a battery of 9 volt in series as shown. Find the reading of voltmeter.



(1) 3 volts (2) 5 volts (3) 6 volts (4) 4 volts

Ans. (4)

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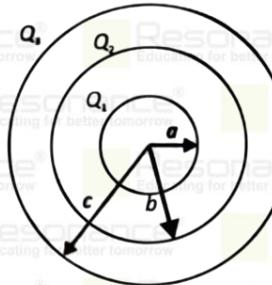
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6. Three uniformly concentric charged shells are kept as shown. Find potential of each shell.



$$(1) V_A = \frac{kQ_1}{a} + \frac{kQ_2}{b} + \frac{kQ_3}{c}, V_B = \frac{k(Q_1+Q_2)}{b} + \frac{kQ_3}{c}, V_C = \frac{k(Q_1+Q_2+Q_3)}{c}$$

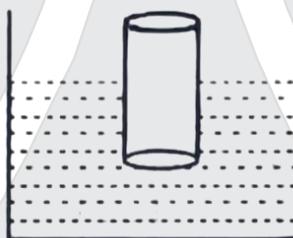
$$(2) V_A = \frac{kQ_1}{a} + \frac{kQ_2}{b} + \frac{kQ_3}{c}, V_B = \frac{k(Q_1+Q_2)}{a} + \frac{kQ_2}{b}, V_C = \frac{k(Q_1+Q_2+Q_3)}{c}$$

$$(3) V_A = \frac{kQ_1}{a} + \frac{kQ_2}{b} + \frac{kQ_3}{c}, V_B = \frac{k(Q_1+Q_2+Q_3)}{b}, V_C = \frac{k(Q_1+Q_2+Q_3)}{c}$$

$$(4) V_A = \frac{kQ_1}{a} + \frac{k(Q_2+Q_3)}{c}, V_B = \frac{k(Q_1+Q_2)}{b} + \frac{kQ_3}{c}, V_C = \frac{k(Q_1+Q_2+Q_3)}{c}$$

Ans. (1)

7. A cylindrical block of mass M and area of cross section A is floating in a liquid of density ρ and with its axis vertical. When the block is pushed into the liquid and released the block starts oscillating. Find the time period of oscillation



$$(1) T = 2\pi \sqrt{\frac{M}{\rho Ag}}$$

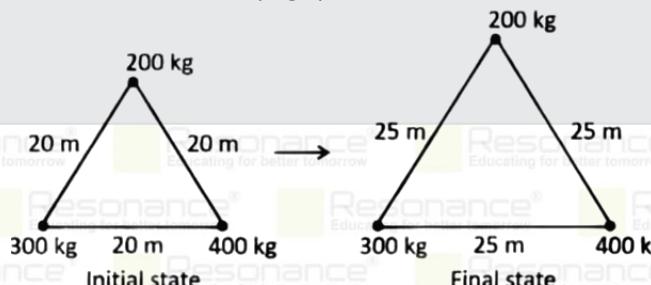
$$(2) T = 2\pi \sqrt{\frac{\rho Ag}{M}}$$

$$(3) T = \pi \sqrt{\frac{\rho Ag}{M}}$$

$$(4) T = \pi \sqrt{\frac{M}{\rho Ag}}$$

Ans. (1)

8. Find the work done to change the configuration of the system from initial to final state as shown in the diagram. (Given: $G = 6.67 \times 10^{-11} \text{ N} \cdot \text{m}^2/\text{kg}^2$)



$$(1) 2.5232 \times 10^{-7} \text{ J}$$

$$(2) 1.7342 \times 10^{-7} \text{ J}$$

$$(3) 6.6325 \times 10^{-7} \text{ J}$$

$$(4) 1.6253 \times 10^{-7} \text{ J}$$

Ans. (2)

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9. Three charges $+2q$, $+2q$ and $-4q$ are situated at $(0, -3a)$, $(2a, 0)$ and $(-2a, 0)$ respectively in the xy plane. The resultant dipole moment about origin is ____.

(1) $6qai + 12qaj$

(2) $12qai + 6qaj$

(3) $12qai - 6qaj$

(4) $6qai - 12qaj$

Ans. (3)

10. A dipole is placed in uniform magnetic field $B = 800$ gauss at an angle 30° then it experiences the torque of 16×10^{-3} N – m. Find the work done in slowly moving the dipole from stable equilibrium to unstable equilibrium.

(1) 5×10^{-3} J

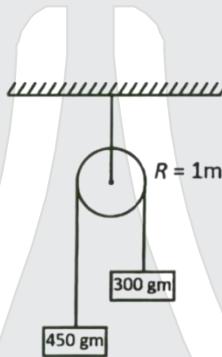
(2) 7.6×10^{-3} J

(3) 24.5×10^{-3} J

(4) 64×10^{-3} J

Ans. (4)

11. When system is released from rest the heavier mass goes 81 cm in 9 sec, find rotational inertia.
($g = 10$ m/s²)



(1) $50.25 \text{ kg} - \text{m}^2$

(2) $25.25 \text{ kg} - \text{m}^2$

(3) $100.25 \text{ kg} - \text{m}^2$

(4) $74.25 \text{ kg} - \text{m}^2$

Ans. (4)

12. Statement-1 : Binding energy per nucleon always increase with mass number.

Statement-2 : Binding energy per nucleon for smaller mass number performs nuclear fusion.

(1) Statement-1, false Statement-2, true

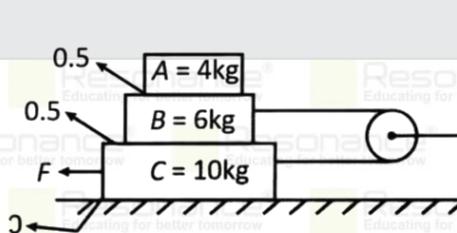
(2) Statement-1, true Statement-2, false

(3) Statement-1, false Statement-2, false

(4) Statement-1, true Statement-2, true

Ans. (1)

13. For the given arrangement find the value of F (in Newton) so that body c moves with constant velocity



Ans. (100 N)

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14. Match the two Lists given below

List-I	List-II
a. Magnetic flux	1. $M^1 L^2 T^{-2} A^{-2}$
b. Magnetic permeability	2. $M^1 L^2 T^{-2} A^{-1}$
c. Magnetic induction	3. $M^1 L^1 T^{-2} A^{-2}$
d. Self induction	4. $M^1 L^0 T^{-2} A^{-1}$

(1) a - 2, b - 3, c - 4, d - 1

(3) a - 4, b - 3, c - 1, d - 2

(2) a - 3, b - 2, c - 1, d - 4

(4) a - 1, b - 2, c - 3, d - 4

Ans. (1)

15. A light ray incident on the prism such that deviation is minimum and angle of incidence on 2nd surface is critical angle. Find prism angle.

(1) 60°

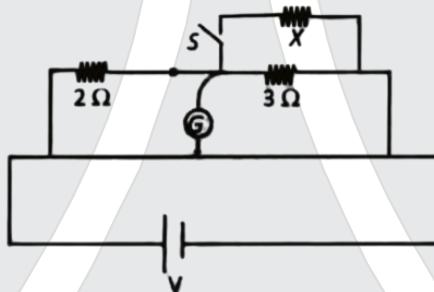
(2) 105°

(3) 74°

(4) 90°

Ans. (1)

16. In meter bridge diagram given below, if S is closed, null point shifts by 25 cm. Find value of resistance X. (in cm)



(1) 1.68

(2) 6.28

(3) 5.4

(4) 4.1

Ans. (1)

17. Velocity of electron in n^{th} shell of a hydrogen like atom is 3×10^5 m/s and velocity of electron in m^{th} shell of that atom is 2.5×10^5 m/s. Find ratio of radius of m^{th} shell to n^{th} shell.

(1) 25/36

(2) 36/35

(3) 25/40

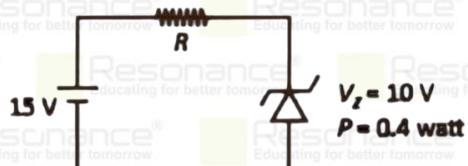
(4) 36/25

Ans. (4)

18. For a microscope focal length of objective is 2 cm and focal length of eyepiece is 5 cm. Tube length is = 10 cm. Magnification for normal adjustment is 5 \times . Find the value of x

Ans. (5)

19. For the given the breakdown voltage of Zener diode is $V_Z = 10$ volts and it can withstand the power dissipation of 0.4 watt. Find the value of resistance R (in Ω)



Ans. (125 Ω)

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