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# JEE (MAIN) 2026

MEMORY BASED QUESTIONS & TEXT SOLUTION

SHIFT-1

**DATE & DAY:** 24<sup>th</sup> 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)

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& 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

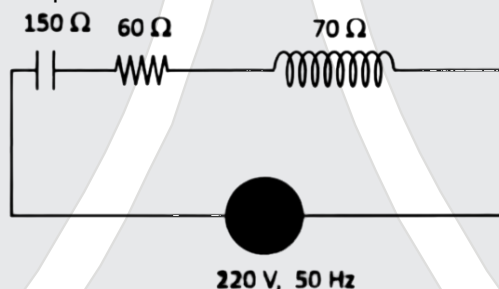
(2) a-s, b-p, c-r, d-q

(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

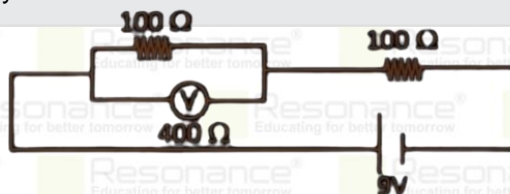
(2) 2:1

(3) 9:4

(4) 2:3

Ans. (3)

5. A voltmeter of  $400 \Omega$  resistance is in parallel with  $100 \Omega$  resistor. And the combination is connected with  $100 \Omega$  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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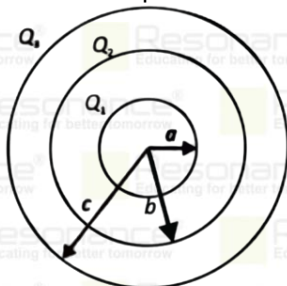
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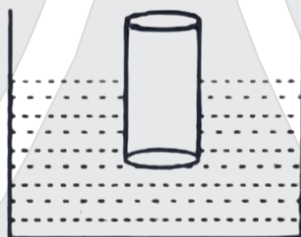
6. Three uniformly concentric charged shells are kept as shown. Find potential of each shell.



$$\begin{aligned} (1) V_A &= \frac{kQ_1}{a} + \frac{kQ_2}{b} + \frac{kQ_3}{c}, V_B = \frac{k(Q_1+Q_2)}{b} + \frac{kQ_3}{c}, V_C = \frac{k(Q_1+Q_2+Q_3)}{c} \\ (2) V_A &= \frac{kQ_1}{a} + \frac{kQ_2}{b} + \frac{kQ_3}{c}, V_B = \frac{k(Q_1+Q_2)}{b} + \frac{kQ_3}{c}, V_C = \frac{k(Q_1+Q_2+Q_3)}{c} \\ (3) V_A &= \frac{kQ_1}{a} + \frac{kQ_2}{b} + \frac{kQ_3}{c}, V_B = \frac{k(Q_1+Q_2+Q_3)}{b}, V_C = \frac{k(Q_1+Q_2+Q_3)}{c} \\ (4) V_A &= \frac{kQ_1}{a} + \frac{k(Q_2+Q_3)}{c}, V_B = \frac{k(Q_1+Q_2)}{b} + \frac{kQ_3}{c}, V_C = \frac{k(Q_1+Q_2+Q_3)}{c} \end{aligned}$$

Ans. (1)

7. A cylindrical block of mass  $M$  and area of cross section  $A$  is floating in a liquid of density  $\rho$  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



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

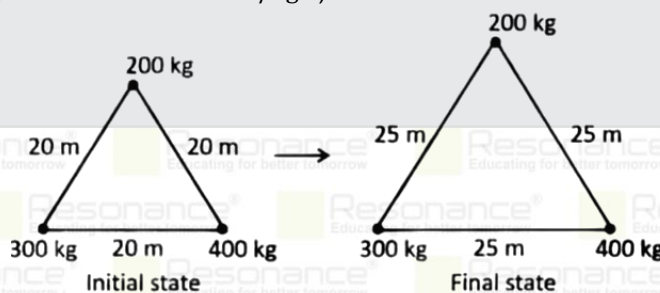
$$(2) T = 2\pi \sqrt{\frac{\rho Ag}{M}}$$

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

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

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)  $6qa\hat{i} + 12qa\hat{j}$  (2)  $12qa\hat{i} + 6qa\hat{j}$  (3)  $12qa\hat{i} - 6qa\hat{j}$  (4)  $6qa\hat{i} - 12qa\hat{j}$

Ans. (3)

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

- (1)  $5 \times 10^{-3} \text{ J}$  (2)  $7.6 \times 10^{-3} \text{ J}$  (3)  $24.5 \times 10^{-3} \text{ J}$  (4)  $64 \times 10^{-3} \text{ J}$

Ans. (4)

11. When system is released from rest the heavier mass goes 81 cm in 9 sec, find rotational inertia.

( $g = 10 \text{ m/s}^2$ )

- (1)  $50.25 \text{ kg-m}^2$  (2)  $25.25 \text{ kg-m}^2$  (3)  $100.25 \text{ kg-m}^2$  (4)  $74.25 \text{ kg-m}^2$

Ans. (4)

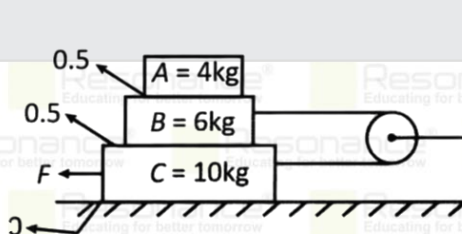
12. **Statement-1** : Binding energy per nucleon always increase with mass number.

**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)  $a - 2, b - 3, c - 4, d - 1$

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

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

(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 2<sup>nd</sup> surface is critical angle. Find prism angle.

(1)  $60^\circ$

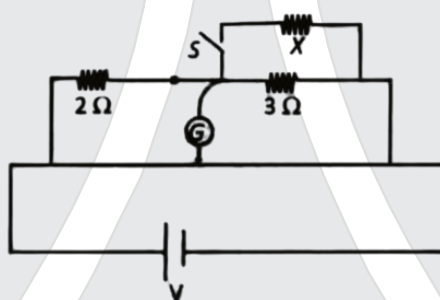
(2)  $105^\circ$

(3)  $74^\circ$

(4)  $90^\circ$

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

(1) 25/36

(2) 36/35

(3) 25/40

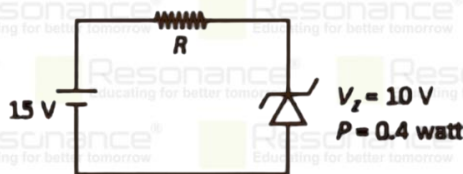
(4) 36/25

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  $5x$ . 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  $\Omega$ )



Ans. (125  $\Omega$ )

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