PAPER SOLUTION

From Meerut

JEE MAIN 2026

JAN	SHIFT
24	1st

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JEE MAIN 2026 LIVE PAPER DISCUSSION

#Q. A spring of stiffness k = 15 N/m is cut into a ratio of 3 : 1. Find the spring constant of smaller length spring thus formed.

(A) 15 N/m

(B) 30 N/m

(C) 45 N/m

(D) 60 N/m

Ans. (D)

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#Q. 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 Antenas
(c) Microwaves	(r) Magnetron
(d) Radio waves	(s) Fast moving electrons striking a metal plate

(A) a–p, b–s, c–r, d–q

(B) a–s, b–p, c–r, d–q

(C) a–s, b–p, c–s, d–q

(D) a–s, b–r, c–p, d–q

Ans. (B)

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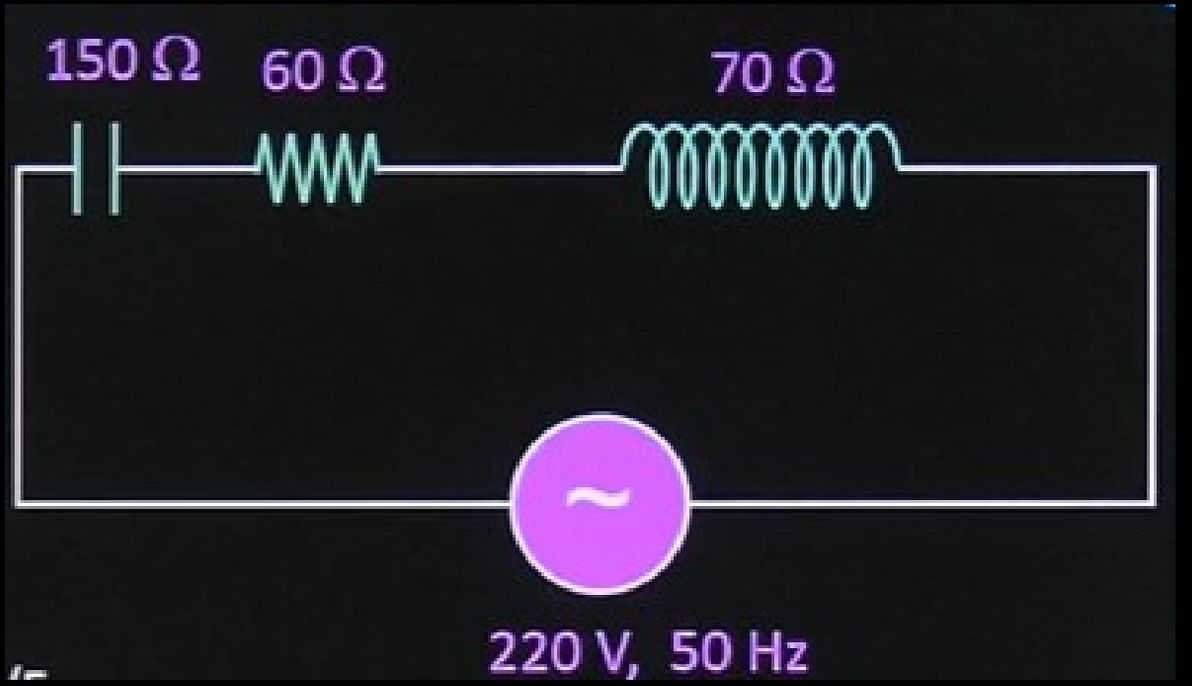
#Q. For the given ac circuit, find the power factor.



A 4/5

B 3/5

C 4/3

D 3/4

Ans. (B)

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

A 2 : 3

B 9 : 4

C 2 : 1

D 5 : 3

Ans. (B)

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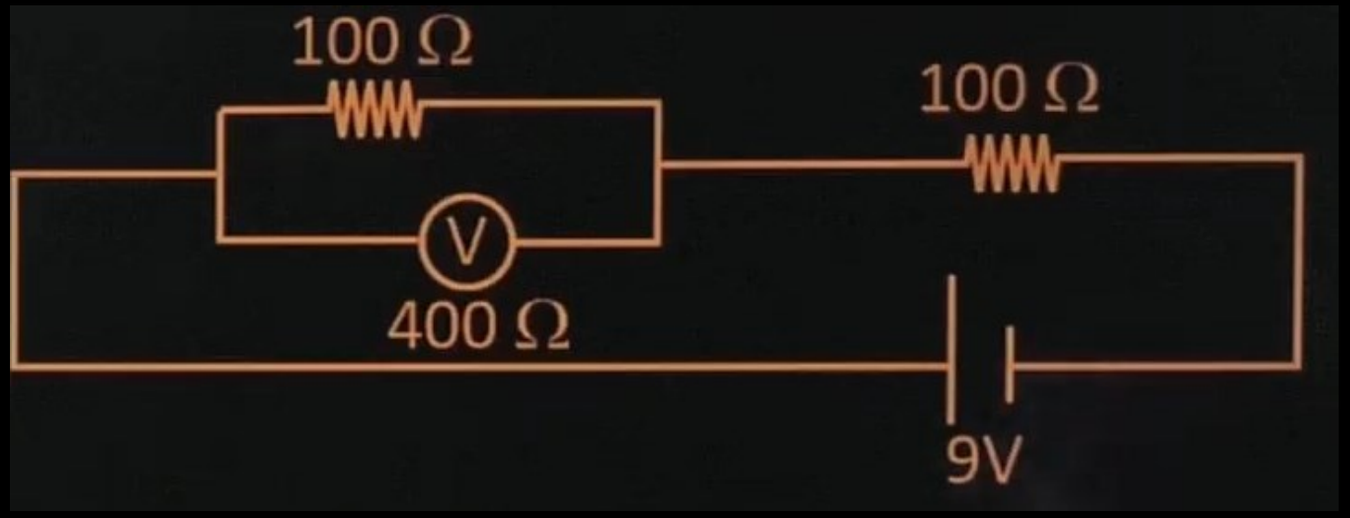
#Q. A voltmeter of 400 Ω resistance is in parallel with 100 Ω resistor. And the combination is connected with 100 Ω resistor and a battery of 9 volt in series as shown find the reading of voltmeter.

(A) 5 volts

(B) 3 volts

(C) 4 volts

(D) 6 volts



Ans. (C)

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

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

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

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

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

Ans. (B)

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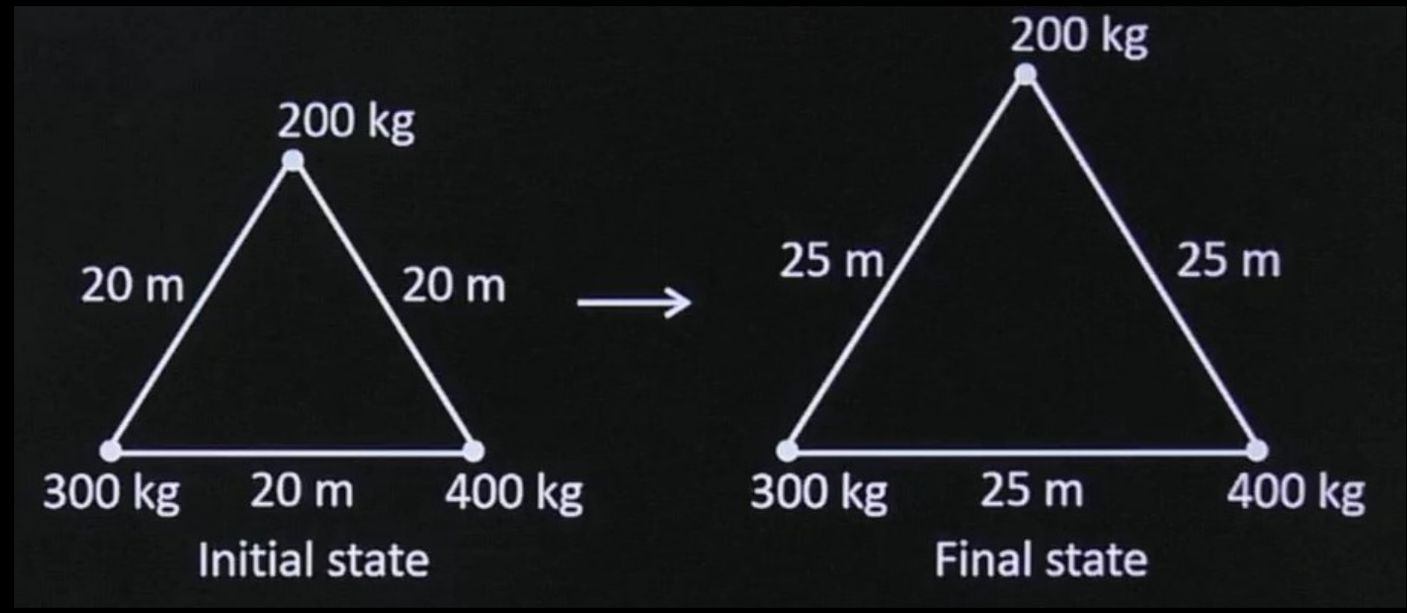
#Q. Find the work done.
(Given: G = $6.67 \times 10^{-11} N - m^2/kg^2$)



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

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

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

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

Ans. (A)

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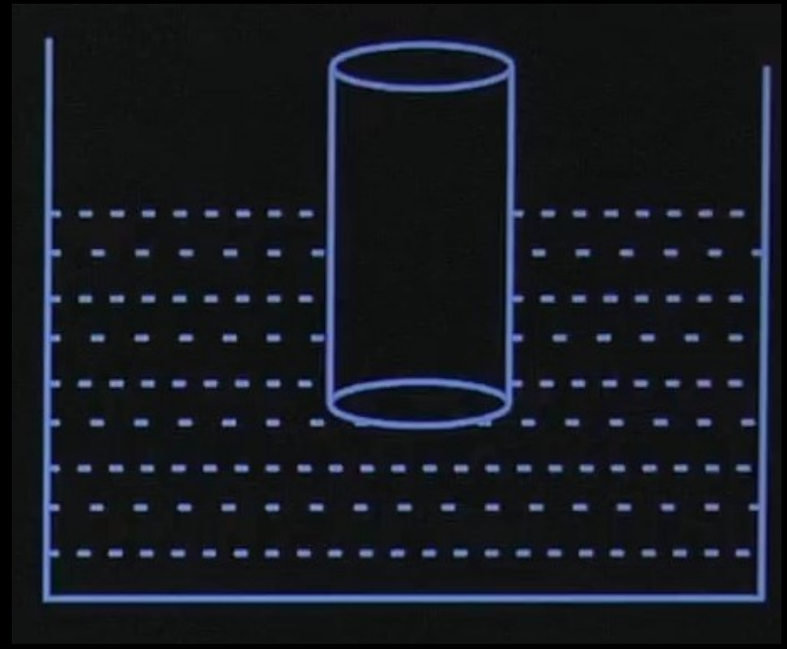
#Q. A cylinder of mas m, length l and area of cross section A is in equilibrium in liquid of density p. Find time period of small vertical oscillations.

A $2\pi\sqrt{\frac{mA}{pg}}$

B $2\pi\sqrt{\frac{mg}{pA}}$

C $2\pi\sqrt{\frac{m}{pA^2g}}$

D $2\pi\sqrt{\frac{m}{pAg}}$



Ans. (D)

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#Q. Match the two Lists given below:

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

(A) a–2, b–3, c–4, d–1

(B) a–3, b–2, c–1, d–4

(C) a–4, b–3, c–1, d–2

(D) a–1, b–2, c–3, d–4

Ans. (A)

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

A $64 \times 10^{-3}\text{J}$

B $24.5 \times 10^{-3}\text{J}$

C $5 \times 10^{-3}\text{J}$

D $7.6 \times 10^{-3}\text{J}$

Ans. (A)

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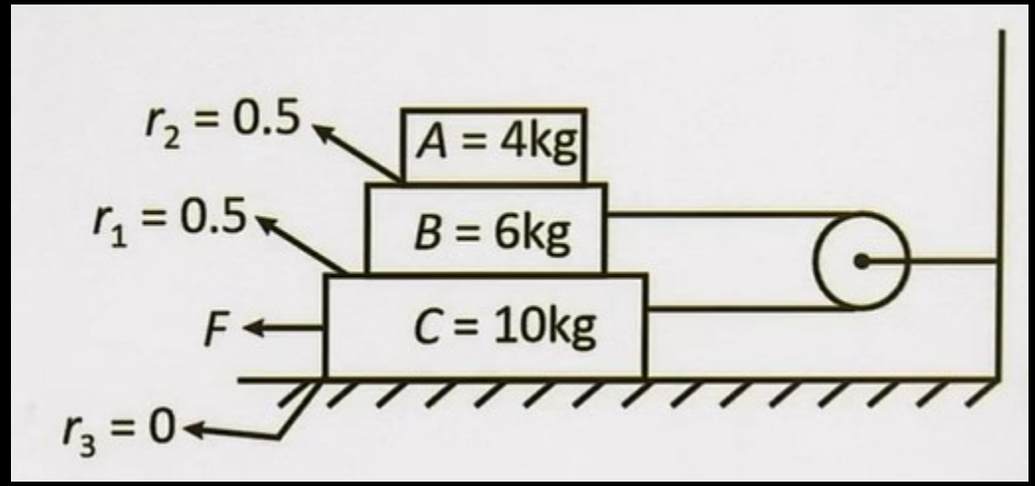
#Q. For the given arrangement find the value of F(in Newton) so that body c moves with constant velocity.



Ans. (100)

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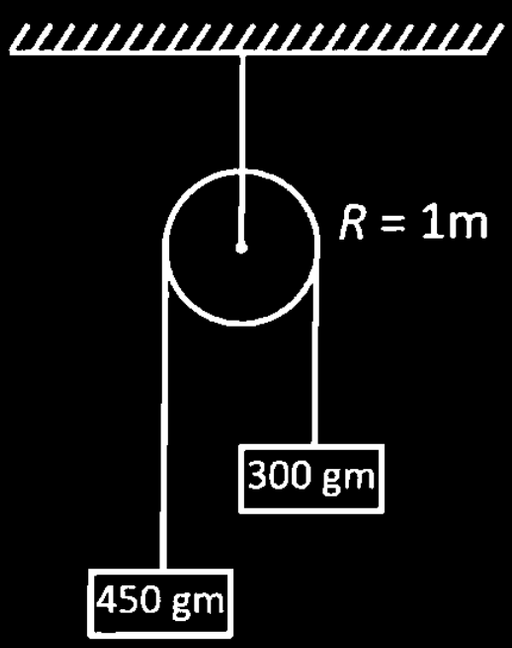
#Q. When system is released from rest the heavier mass goes 81 cm in 9 sec, find rotational inertia. $(g = 10\ m/s^2)$



(A) 74.25 kg-m^2

(B) 100.25 kg-m^2

(C) 50.25 kg-m^2

(D) 25.25 kg-m^2

Ans. (A)

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#Q. Given below are two statements

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

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

(A) Statement I and statement II both are correct

(B) Statement I and statement II both are incorrect

(C) Statement I correct statement II incorrect

(D) Statement I incorrect statement II correct

Ans. (D)

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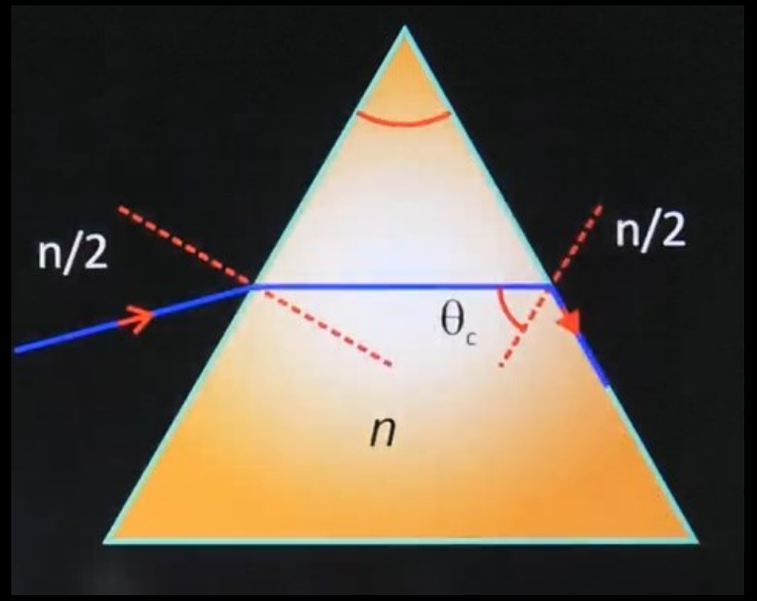
#Q. A light ray incident on the prism such that deviation is minimum and angle of incidence on 2nd surface is critical angle. Find prism angle.



(A) 60°

(B) 74°

(C) 90°

(D) 105°

Ans. (A)

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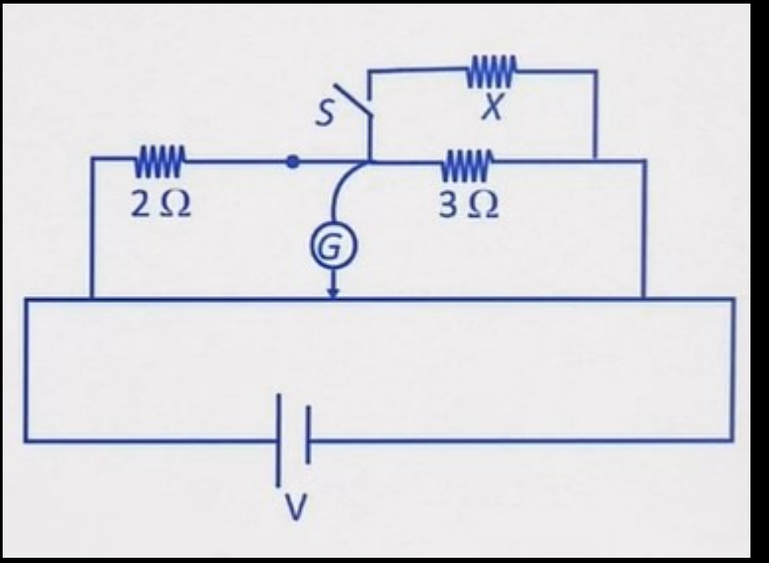
#Q. In meter bridge diagram given below, if S is closed, null point shifts by 25 cm. Find value of resistance X. (in cm)



(A) 4.1

(B) 1.68

(C) 6.28

(D) 5.4

Ans. (B)

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

A 25/40

B 25/36

C 36/25

D 36/35

Ans. (C)

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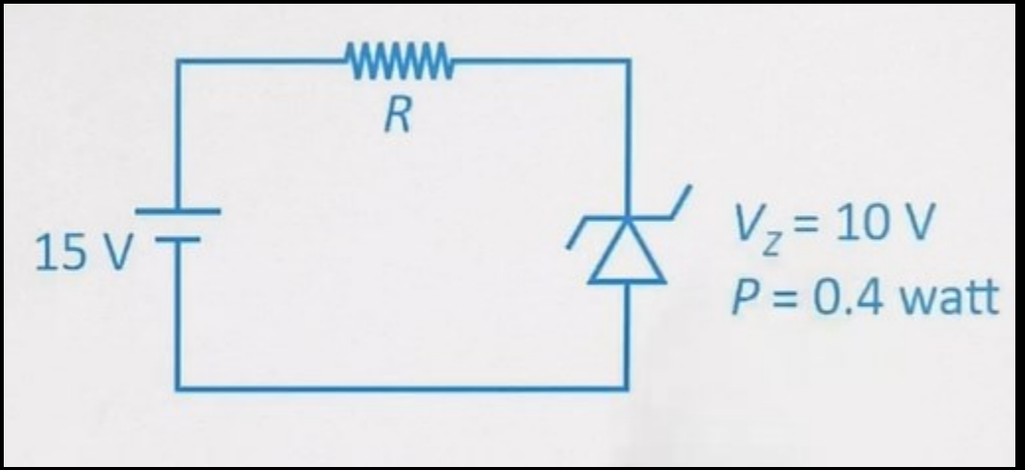
#Q. For the given the breakdown voltage of Zener diode is V_z = 10 volts and it can with stand the power dissipation of 0.4 watt. Find the value of resistance R (in Ω)



Ans. (125)

#Q. If potential varies as distance r as $v(r) = ar^3 + b$. Total magnitude of charge Q in closed within a sphere of unit radius is $Q = \alpha(\pi a \varepsilon_0)$. Find the value of α.

Ans. (12)