PAPER SOLUTION

From Meerut

JEE MAIN 2026

JAN	SHIFT
22	1st

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JEE MAIN 2026 LIVE PAPER DISCUSSION

#Q. Two disc having same moment of inertia about their axis. Thickness is t_1 and t_2 and they have same density. If $R_1/R_2 = 1/2$, then find t_1/t_2.

A 1/16

B ¼

C 4

D 16

Ans. (C)

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#Q. In series R-L circuit, voltage of battery is 10 V. Resistance and inductance are 10 Ω and 10 mH respectively. Find energy stored in the inductor when current reaches $\frac{1}{e}$ times of maximum value.

A 0.67 mJ

B 0.33 mJ

C 1.33 mJ

D 0.50 mJ

Ans. (A)

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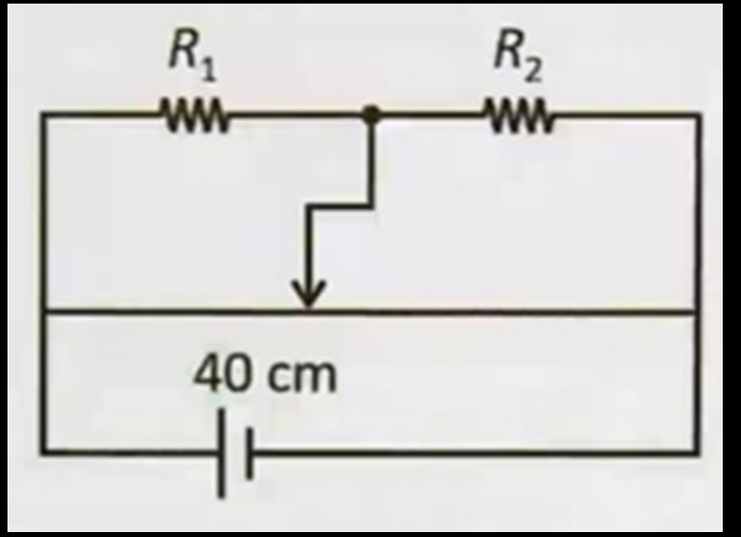
#Q. In a potentiometer null point for two resistance R_1 and R_2 is at 40 cm as shown. If 16 Ω is connected in parallel to R_2 then null point is at 50 cm then R_1 and R_2 are respectively.



(A) 16 Ω, 48 Ω

(B) 16/3 Ω, 8 Ω

(C) 32 Ω, 32/3 Ω

(D) 32/3 Ω, 32 Ω

Ans. (B)

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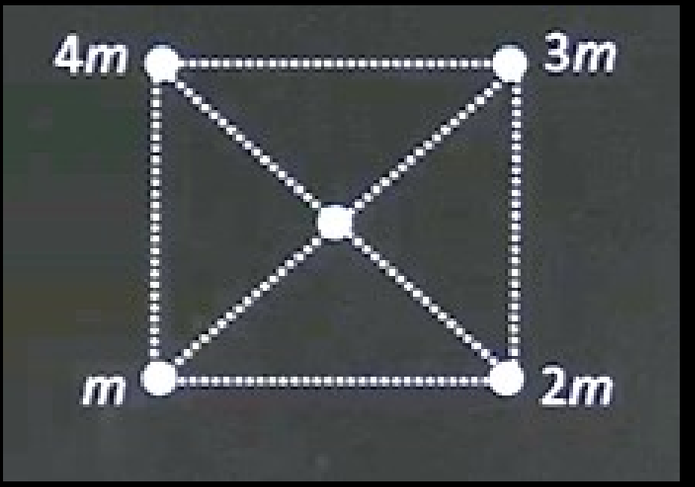
#Q. In the given situation force at center on 1 kg mass is F_1. Now if 4m and 3m is interchanged the force is F_2. Given : $\frac{F_1}{F_2} = \frac{2}{\sqrt{\alpha}}$. Find α.



A $\alpha = 5$

B $\alpha = 3$

C $\alpha = 7$

D $\alpha = 1$

Ans. (A)

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#Q. A particle is projected at an angle of 60° with horizontal. When particle velocity vector makes an angle of 45° with horizontal its speed becomes 20m/s what is the initial speed?

A $20\sqrt{2}$ m/s

B $10\sqrt{2}$ m/s

C $30\sqrt{2}$ m/s

D $40\sqrt{2}$ m/s

Ans. (A)

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#Q. Match the column:

	Column-I		Column-II
(A)	Thermal Conductivity	(P)	$[ML^2T^{-2}K^{-1}]$
(B)	Boltzmann Constant	(Q)	$[M^1L^{-1}T^{-2}]$
(C)	Spring constant	(R)	$[M^1L^1T^{-3}K^{-1}]$
(D)	Surface tension	(S)	$[M^1L^0T^{-2}]$
		(T)	$[M^1L^2T^{-3}K^{-1}]$
		(U)	$[ML^2T^{-2}]$

(A) A–R, B–P, C–S, D–S

(B) A–T, B–P, C–U, D–S

(C) A–R, B–T, C–Q, D–Q

(D) A–T, B–U, C–S, D–Q

Ans. (A)

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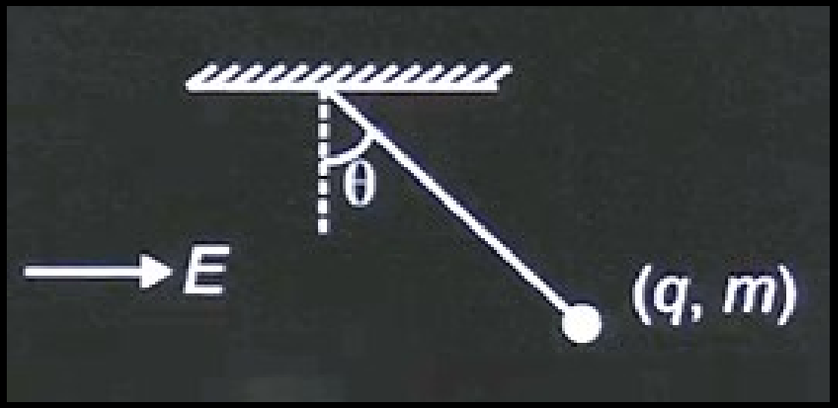
#Q. A simple pendulum with bob (mass m & charge q) is in equilibrium in presence of horizontal electric field E then tension in thread is

A $mg + qE$

B $\sqrt{m^2g^2 + q^2E^2}$

C $\sqrt{mg + qE}$

D $mg + qE\tan\theta$



Ans. (B)

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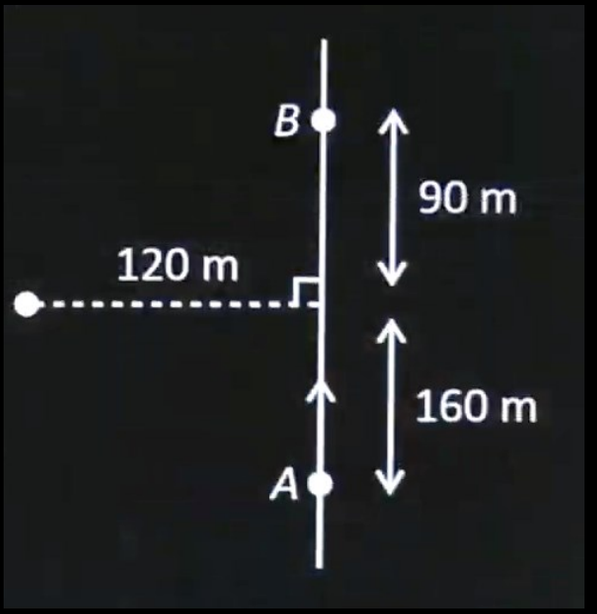
#Q. Detector D moves from A to B and observe the frequencies are differing byy 10 Hz. Source is emitting frequency f_0 as shown: speed of detector is 35 times less than speed of sound. Then f_0 is

(A) 400 Hz

(B) 350 Hz

(C) 250 Hz

(D) 150 Hz



Ans. (C)

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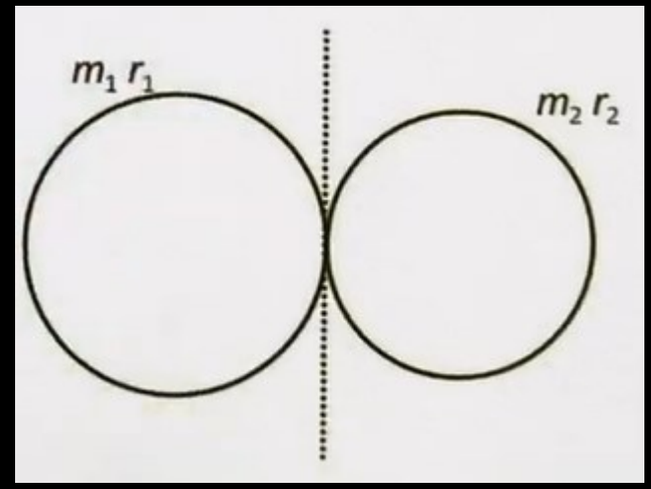
#Q. Disk $m_1 = 5$ kg and radius $r_1 = 10$ cm and disk $m_2 = 10$ kg and radius $r_2 = 50$ cm are arranged as shown in figure. Find moment of inertia about an axis the common tangent and parallel to the plane of the disk.



(A) 57/64 kg m^2

(B) 51/16 kg m^2

(C) 31/8 kg m^2

(D) 41/8 kg m^2

Ans. (B)

JEE MAIN 2026 LIVE PAPER DISCUSSION

#Q. In adiabatic process the temperature reduces to $\frac{1}{4}$th and volume increases to 8 times. Find adiabatic constant of the gas.

A 3/4

B 5/3

C 5/7

D 8/5

Ans. (B)

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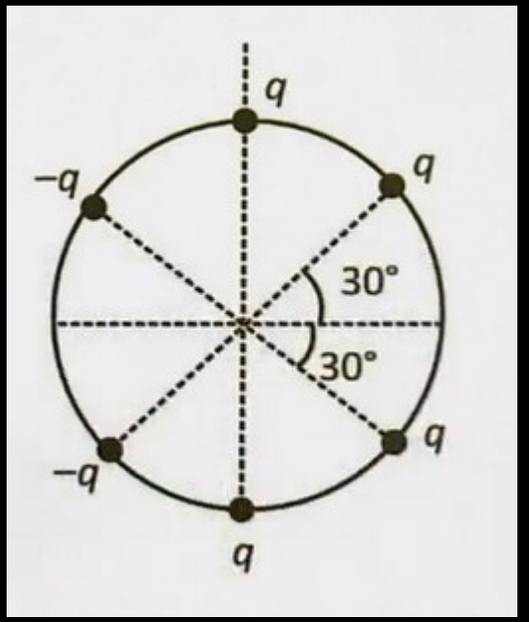
#Q. Six charges (four +q, two –q) are present at circle of radius r and centred at origin as shown. Electric field at origin is:



A $\frac{\sqrt{3}q}{4\pi\epsilon_0 r^2}\hat{\imath}$

B $\frac{\sqrt{3}q}{\pi\epsilon_0 r^2}\hat{\imath}$

C $\frac{\sqrt{3}q}{2\pi\epsilon_0 r^2}(-\hat{\imath})$

D $\frac{\sqrt{3}q}{4\pi\epsilon_0 r^2}(-\hat{\imath})$

Ans. (C)

JEE MAIN 2026 LIVE PAPER DISCUSSION

#Q. A planet 'A' having density ρ and radius R has escape velocity = 10 km/sec. Find the escape velocity (in m/s) of a plant B having density and radius both 10 times that of plant A.

A $100\sqrt{10}$

B $100\sqrt{20}$

C $\sqrt{3000}$

D $\sqrt{900}$

Ans. (A)

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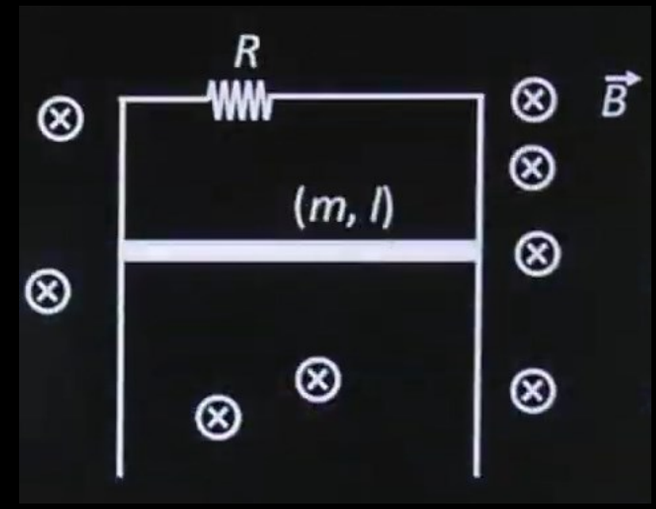
#Q. A conducting rod of mass m and length l is moving on a infinite pair of conducting rails as shown. Conducting rails are connected to a resistance R at one end. Motion is in vertical plane and horizontal magnetic field in the region is B. Find terminal speed of rod.



(A) $V_0 = \frac{3mgR}{2B^2l^2}$

(B) $V_0 = \frac{mgR}{2B^2l^2}$

(C) $V_0 = \frac{mgR}{B^2l^2}$

(D) $V_0 = \frac{2mgR}{B^2l^2}$

Ans. (C)

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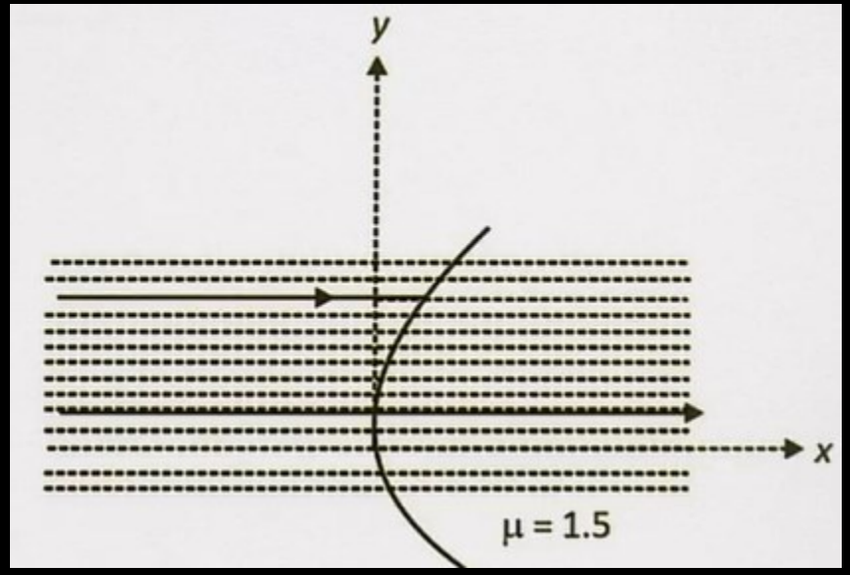
#Q. A ray parallel to x axis principal axis of incident curved surface. The x co-ordinate where ray cuts x-axis (in m) is : (The radius of curvature is 50 cm)



A 1.5

B 0.5

C 1

D 2

Ans. (A)

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#Q. A sinusoidal EMW is given by $\vec{E}$ = 20 sin $\frac{2}{300}$x – 10^6t) propagating in a non–magnetic material. Dielectric constant of material is:

A 9×10^4

B 3×10^4

C 2

D 4

Ans. (D)

#Q. Match the column-I with the correct numerical values of energy/heat in Column-II (R is universal gas constant)

	Column-I		Column-II
(A)	1 mole of monoatomic ideal gas undergoes polytopic process $PV^{-1/2}$ with $\Delta T = 320$ K find ΔU	(P)	650 R
(B)	Find heat supplied to 2 moles of gas having heat capacity as $\frac{5}{2}R$ and $\Delta T = 130$ K	(Q)	575 R
(C)	Find the ΔU for 1 mole diatomic gas for $\Delta T = 230$ K	(R)	480 R

A $A \to R; B \to P; C \to Q$

B $A \to P; B \to R; C \to Q$

C $A \to R; B \to Q; C \to P$

D $A \to Q; B \to P; C \to R$

Ans. (A)

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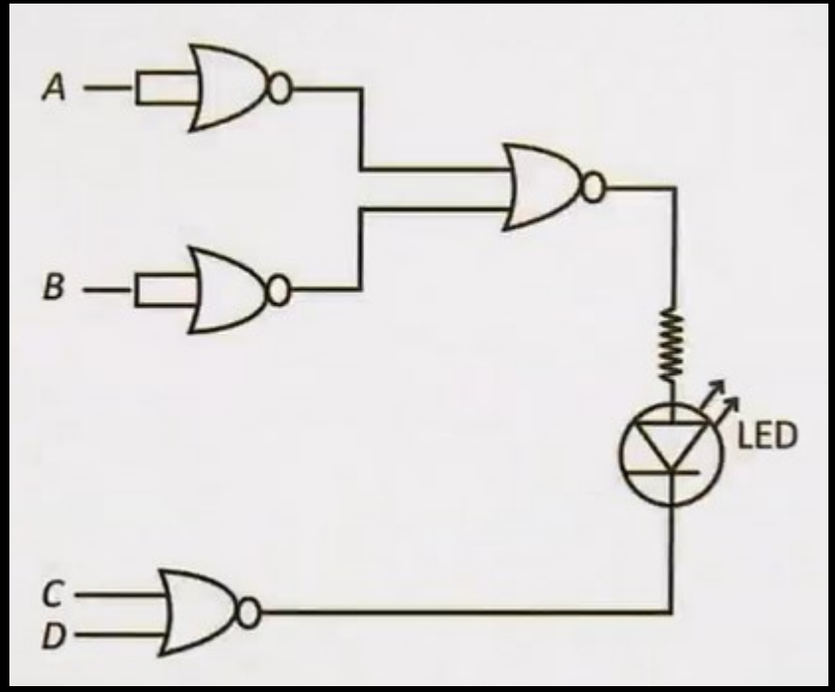
#Q. In the given logic circuit shown in the figure, inputs A, B, C, and D are applied as shown. An LED is connected at the output. In which of the following combinations will the LED glow.



(A) A = 1, B = 1, C = 0, D = 0

(B) A = 0, B = 1, C = 1, D = 0

(C) A = 1, B = 0, C = 0, D = 0

(D) A = 1, B = 1, C = 1, D = 1

Ans. (C)

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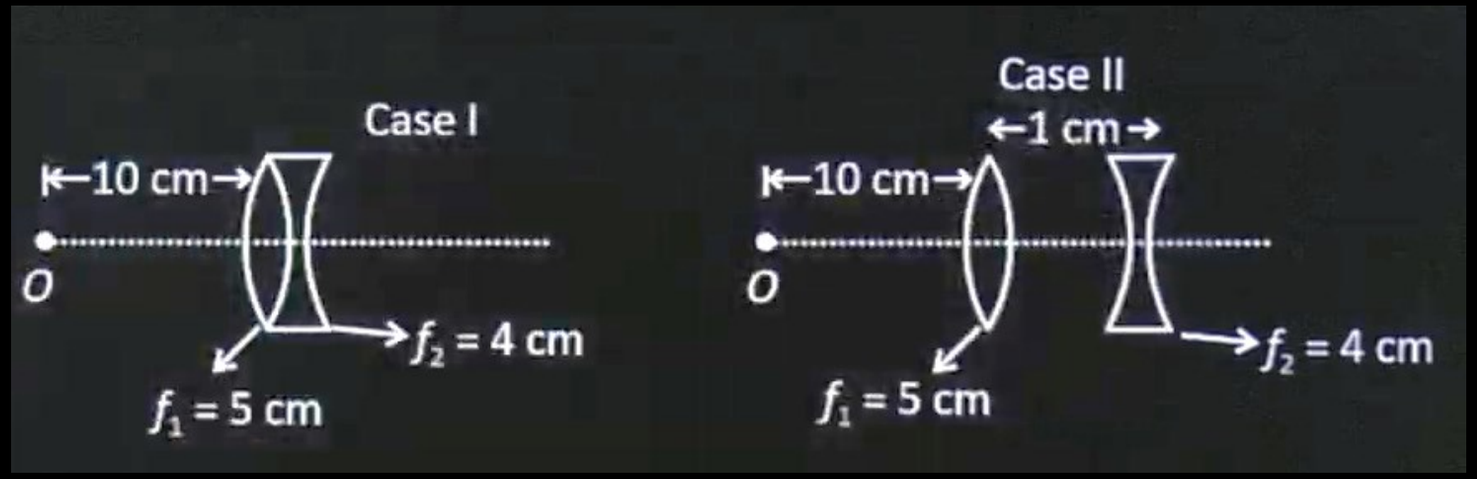
#Q. Combination of lenses are arranged in case I and case II as shown in figure. Magnification in two cases are m_1 and m_2 Find $\left|\frac{m_1}{m_2}\right|$.

A 5/6

B 4/3

C 3/4

D 6/5



Ans. (A)