



PAPER SOLUTION

From Meerut

JEE MAIN

JAN

SHIFT

29

1st

2025

Aryan Agarwal

Founder and CEO

CVPS INTEGRATED STAR COURSE



CITY VOCATIONAL PUBLIC SCHOOL

INTEGRATED STAR COURSE



IIT-JEE & NEET

IX-XII BATCHES

JEE MAINS 2024 STARS

MEERUT
TOPPER



VANSH VERMA

99.905%ile

JEE ADVANCED AIR 1741
IIT DELHI



HARSHWARDHAN

99.213%ile



GARV KAPOOR

98.977%ile



ALOK CHAUDHARY

97.767%ile



VANSH JOSHI



APURVA KAUSHIK



QAYAD ALI



SANSKRITI SHARMA



ADITYA KUMAR BHARGWAL

NEET 2024 STAR

NEET SCORE
683/720



ADEEBA MUHIUDDIN

99.677%ile

AIR 7364

Aryan Agarwal
Founder & CEO

Disclaimer: This academic course is exclusively for day boarders only

9389338683, 7906236652



Rank Predictor



Question Paper



JEE MAIN 2025 LIVE PAPER DISCUSSION

#Q. Assertion : At the peak of mountain, time period of pendulum increases.
Reason : Time period of pendulum increases with decrease in g .

- A** Assertion is correct, Reason is incorrect
- B** Assertion is incorrect, Reason is correct
- C** Assertion is incorrect, Reason is incorrect
- D** Assertion is correct, Reason is correct

Ans. (D)



JEE MAIN 2025 LIVE PAPER DISCUSSION

#Q. The velocity of a particle moving on a straight line varies with time as $v = At^2 + \frac{Bt}{C+t}$, where A, B, C, are constants. Find the dimension of ABC.

A L^2t^{-2}

B L^2t^{-1}

C L^2t^{-3}

D Lt^{-3}

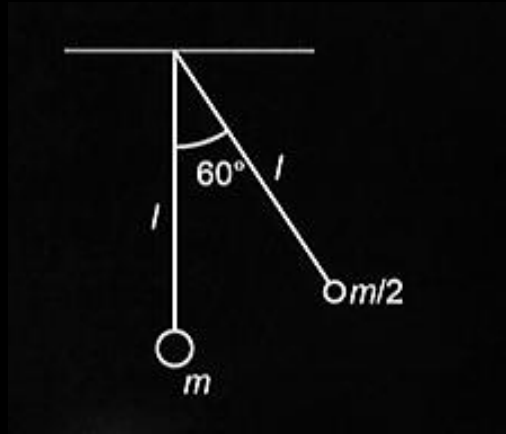
Ans. (C)



JEE MAIN 2025 ▶ LIVE PAPER DISCUSSION

#Q. A pendulum of mass $\frac{m}{2}$ is released from given situation. Find speed of another pendulum after collision. ($e = 1$)

- A** $\sqrt{\frac{3}{2}gl}$
- B** $\frac{2}{3}\sqrt{gl}$
- C** $\sqrt{\frac{gl}{3}}$
- D** $\frac{1}{3}\sqrt{gl}$



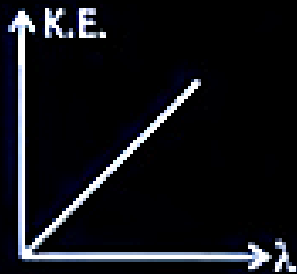
Ans. (B)



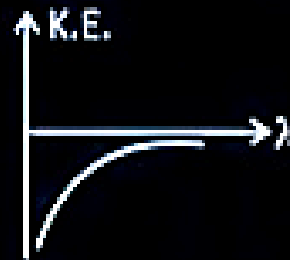
JEE MAIN 2025 LIVE PAPER DISCUSSION

#Q. The graph between wavelength (λ) of incident light and kinetic energy (K.E.) of photoelectrons in photoelectric effect is :

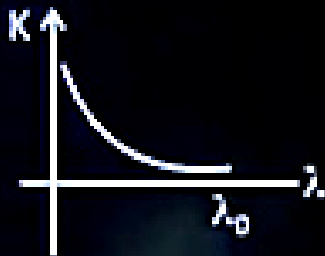
A



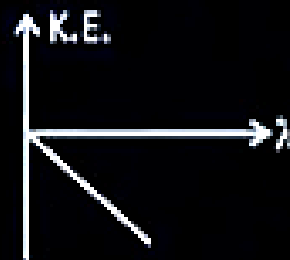
B



C



D



Ans. (C)



JEE MAIN 2025 LIVE PAPER DISCUSSION

**#Q. Statement-1 : Electromagnetic wave have both energy and momentum.
Statement-2 : Rest mass of photon is zero.**

- A** Statement-1 is correct, statement-2 is correct
- B** Statement-1 is correct, statement-2 is incorrect
- C** Statement-1 is incorrect, statement-2 is correct
- D** Statement-1 is incorrect, statement-2 is incorrect

Ans. (A)



JEE MAIN 2025 LIVE PAPER DISCUSSION

#Q. Two projectiles were launched from same position simultaneously only same speed one of the projectile was launched at angle $(45 - \alpha)^\circ$ and the other at an angle of $(45 + \alpha)^\circ$. Find the ratio of maximum height of the projectile.

A $\frac{1 - \sin \alpha}{1 + \sin \alpha}$

B $\frac{1 - \sin 2\alpha}{1 + \sin 2\alpha}$

C $\frac{1 - \tan \alpha}{1 + \tan \alpha}$

D $\frac{1 - \cos \alpha}{1 + \cos \alpha}$

Ans. (B)



JEE MAIN 2025 LIVE PAPER DISCUSSION

#Q. A river is flowing with speed 9 km/h. Boat is going downstream-speed of boat in still water is 27 km/h. A person in boat throws a ball upwards with speed 10 m/s. Find range of the ball as seen by an observer at bank of river.

- A** 10 m
- B** 20 m
- C** 25 m
- D** $20\sqrt{3}$ m

Ans. (B)



JEE MAIN 2025 LIVE PAPER DISCUSSION

#Q. Which of two physical quantities have same dimensions ?

- A** Angular momentum and Planck's constant
- B** Torque and moment of inertia
- C** Impulse and surface tension
- D** Momentum and work done

Ans. (A)



JEE MAIN 2025 LIVE PAPER DISCUSSION

#Q. If radius of first Bohr's orbit of H-atom is a_0 . Then find the radius of 2nd Bohr's orbit of H-atom.

- A** $8a_0$
- B** $4a_0$
- C** $2a_0$
- D** $6\pi a_0$

Ans. (B)



JEE MAIN 2025 ▶ LIVE PAPER DISCUSSION

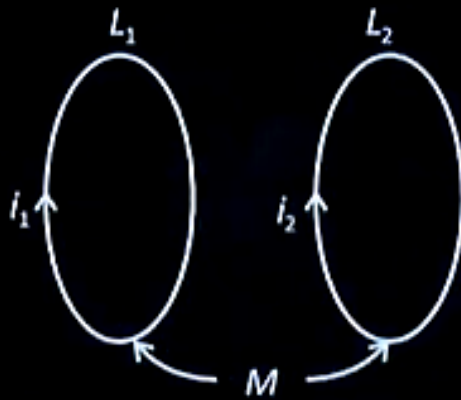
#Q. Two coils having self-inductance L_1 and L_2 are placed closely such that they have a mutual inductance M . if the carry currents i_1 and i_2 as shown in the figure thane the induced emf in coil 1 is :

A $-L_1 \left(\frac{di_1}{dt} \right) + M \left(\frac{di_2}{dt} \right)$

B $-L_1 \left(\frac{di_1}{dt} \right) - M \left(\frac{di_2}{dt} \right)$

C $-L_1 \left(\frac{di_2}{dt} \right) + M \left(\frac{di_1}{dt} \right)$

D $-L_1 \left(\frac{di_2}{dt} \right) - M \left(\frac{di_1}{dt} \right)$



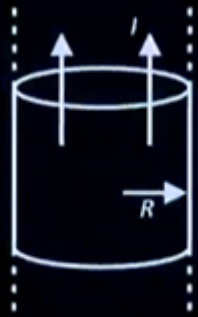
Ans. (B)



JEE MAIN 2025 LIVE PAPER DISCUSSION

#Q. An infinite solid cylindrical wire of radius R carries a current I uniformly distributed along its area. The distance from the centre where the magnetic field is equal to $\frac{\mu_0 I}{4\pi R}$ is

- A** $R/2$
- B** R
- C** $R/4$
- D** Zero



Ans. (A)



JEE MAIN 2025 LIVE PAPER DISCUSSION

#Q. When ball is kept under sea at depth 2.5 km. Find percentage change in it's volume. If bulk modulus of water is 2×10^9 Pa.

- A** 2%
- B** 1.5%
- C** 1.25%
- D** 2.75%

Ans. (C)



JEE MAIN 2025 LIVE PAPER DISCUSSION

#Q. Heat given to 0.5 moles of a monoatomic gas at constant pressure is 500 J. Initial temperature of gas was 27°C. Find value of ΔU and ΔT .

- A** 300 J, 48°C
- B** 150 J, 24°C
- C** 180 J, 16°C
- D** 210 J, 18°C

Ans. (A)



JEE MAIN 2025 LIVE PAPER DISCUSSION

#Q. Assertion : A negative potential is required to stop the photoelectron.
Reason : Speed of electron decreases when a negative potential is applied in a photo cell.

- A** Assertion is correct, Reason is incorrect
- B** Assertion is correct, Reason is correct
- C** Assertion is incorrect, Reason is correct
- D** Assertion is incorrect, Reason is incorrect

Ans. (B)



JEE MAIN 2025 LIVE PAPER DISCUSSION

#Q. If electric dipole of dipole moment \vec{P} is placed in electric field \vec{E} with $\vec{P} \parallel \vec{E}$. It is rotated slightly (and slowly) and released. Find the time period of oscillation of dipole (moment of inertia of dipole is I)

A $T = 2\pi \sqrt{\frac{I}{PE}}$

B $T = \frac{1}{2\pi} \sqrt{\frac{PE}{I}}$

C $T = 2\pi \sqrt{\frac{IE}{P}}$

D $T = \frac{1}{2\pi} \sqrt{\frac{PI}{E}}$

Ans. (A)



JEE MAIN 2025 LIVE PAPER DISCUSSION

#Q. In adiabatic process of closed system, work done by the gas depends explicitly on :

- A** Change in volume
- B** Change in pressure
- C** Change in temperature
- D** Change in number of moles

Ans. (C)



JEE MAIN 2025 LIVE PAPER DISCUSSION

#Q. A particle is able to complete the vertical circular motion with speed $n\sqrt{gR}$ at top-most point. Find the ratio of $\frac{KE(\text{Bottom})}{KE(\text{Top})}$:

- A** $\frac{n^2 + 4}{n}$
- B** $\frac{n}{n^2 + 4}$
- C** $\frac{n^2 + 2}{n}$
- D** $\frac{n^2 + 4}{n^2}$



Ans. (D)



JEE MAIN 2025 LIVE PAPER DISCUSSION

#Q. Match the correct option for List-I and List-II, where symbols have usual meanings.

	List-I		List-II
(A)	Electric field inside the spherical shell	(i)	$\frac{\sigma}{2\epsilon_0}$
(B)	Electric field just outside the spherical shell	(ii)	$\frac{\sigma}{\epsilon_0}$
(C)	Electric field inside the charged parallel plate capacitor	(iii)	Zero
(D)	Electric field of infinite charge sheet	(iv)	$\frac{2\sigma}{\epsilon_0}$

A A-(iii), B(ii), C(iv), D(ii)

B A-(iii), B(ii), C(ii), D(i)

C A-(iii), B(ii), C(ii), D(iv)

D A-(iv), B(iii), C(i), D(ii)

Ans. (B)



JEE MAIN 2025 LIVE PAPER DISCUSSION

#Q. In a hydraulic lift, the two sides have areas $A_1 = 25 \text{ cm}^2$ and $A_2 = 100 \text{ cm}^2$. If a force of 100 N is applied normally on the area A_1 , then the force on the area A_2 is _____ n.

Ans. (400)



JEE MAIN 2025 LIVE PAPER DISCUSSION

#Q. Find magnitude of component of torque about origin in z-direction when force $\vec{F} = \hat{i} - \hat{j} + \hat{k}$ acts at $(1, 1, 1)$.

Ans. (2)