



JEE (MAIN) 2026

MEMORY BASED QUESTIONS & TEXT SOLUTION

SHIFT-1

DATE & DAY: 21st January 2026 & Wednesday

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: 66222

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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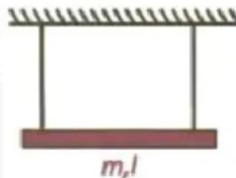
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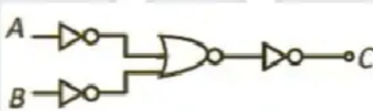
1. A rod of mass m and length l is attached to two ideal strings. Find tension in left string just after right string is cut.



- (1) $\frac{mg}{2}$ (2) $\frac{mg}{4}$ (3) $\frac{2}{3}mg$ (4) $\frac{mg}{5}$

Ans. 2

2. Which logic gate is given in the figure?



- (1) XOR (2) NOR (3) NAND (4) OR

Ans. 3

3. Find dimensions of $\frac{A}{B}$ if $\left(P + \frac{AE^2}{B}\right) + \frac{1}{2}\rho V^2 = \text{constant}$, where $P \rightarrow$ pressure, $\rho \rightarrow$ density, $V \rightarrow$ speed.

- (1) $ML^{-1} T^{-4}$ (2) $ML^{-1} T^{-4}$ (3) $ML^2 T^{-4}$ (4) $ML^{-1} T^{-2}$

Ans. 2

4. An α -particle having kinetic energy 7.7 MeV is approaching fixed gold nucleus (atomic number is 79). Find distance of closest approach.

- (1) 1.72 nm (2) 6.2 nm (3) 16.8 nm (4) 0.2 nm

Ans. 1

5. An air filled capacitor of capacitance C filled with dielectric ($k = 3$) of width $d/3$, where d is separation between plates. The new capacitance is

- (1) $\frac{9}{5}C$ (2) $\frac{5}{4}C$ (3) $\frac{4}{3}C$ (4) $\frac{9}{7}C$

Ans. 4

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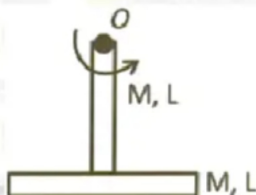
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6. Find the moment of inertia of system formed using two identical rods about the given axis of rotation as shown.



- (1) $\frac{17}{12}ML^2$ (2) $\frac{13}{12}ML^2$ (3) $\frac{2}{3}ML^2$ (4) $\frac{3}{4}ML^2$

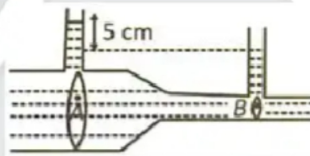
Ans. 1

7. If electric field of EM wave is given by $60[\sin 2\pi(3 \times 10^{11}t) + \sin 2\pi(12 \times 10^{11}t)]$ at $x = 0$ falls on a photo sensitive material having work function 2.8 eV. Find the maximum kinetic energy (MeV) of ejected electrons.

(1) 2.52eV (2) 2.16eV (3) 2.00eV (4) 2.34eV

Ans. 2

8. Find volume flow rate in the venturi meter given below in which water is flowing. [Cross-section area at A & B is $a, \frac{A}{a} = 2, A = \sqrt{3} \text{ m}^2, P = 1000 \text{ kg/m}^3$.]



(1) 1 (2) $\sqrt{3}$ (3) $2\sqrt{3}$ (4) $\sqrt{2}$

Ans. 1

9. Wave propagates whose electric field is given by $\vec{E} = 69\sin(\omega t - kx)\hat{j}$, find the direction of magnetic field

(1) \hat{k} (2) $-\hat{k}$ (3) $\frac{t+j}{\sqrt{2}}$ (4) $\frac{i-j}{\sqrt{2}}$

Ans. 1

10. Two rods of equal length of 60 cm each are joined together end to end. Coefficient of linear expansions of the rods are $24 \times 10^{-6} \text{ C}^{-1}$ and $1.2 \times 10^{-5} \text{ C}^{-1}$. Their temperatures are same and equal to 30°C which is increased to 100°C . Find final length of the combination (in cm)

(1) 120.1321 (2) 120.1123 (3) 120.1512 (4) 120.1084

Ans. 3

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11. Find change in internal energy of gas if its temperature changes by 10 K. Number of moles of gas is 10, C_p (specific heat at constant pressure of the gas is 7 cal/K/mol) and R (gas constant) = 2 cal/K.

(1) 1500 cal (2) 500 cal (3) 250 cal (4) 100 cal

Ans. 2

12. Two mechanical wave on strings of equal length (L) tension (T) having linear mass density $\frac{\mu_1}{\mu_2} = \frac{1}{2}$. Find the ratio of time taken for a wave pulse to travel from one end to the other in both strings. (ignore gravity)

(1) $\frac{1}{\sqrt{5}}$ (2) $\frac{1}{\sqrt{2}}$ (3) $\sqrt{2}$ (4) $\sqrt{5}$

Ans. 2

13. A satellite is revolving around a planet in orbit radius of $1.5 R$. Additional minimum energy required to transfer the satellite to new orbit radius of $3R$ is (and M are mass of satellite & planet) $\frac{GMm}{\lambda R}$ then X is ____

Ans. 6

14. There are two springs of spring constants $k_1 = (20 \pm 0.2) \text{ N/m}$ and $k_2 = (30 \pm 0.3) \text{ N/m}$. If they are connected in parallel then percentage error in equivalent spring constant of combination is ____ %.

Ans. 1

15. In a YDSE set up, a slab of width t is inserted in front of one of slit. The interference pattern shifts by 0.2 cm on the screen. If the refractive index of slab is 1.5 than t is $N\mu\text{m}$ (screen distance 50 cm and slits separation 1 mm) then N is ____

Ans: 8

16. A conducting circular loop of area 1.0 m^2 is placed perpendicular to a magnetic field which varies as $B = \sin(100t)$ tesla. If the resistance of the loop is 100Ω then average thermal energy dissipated in the loop in one period is

(1) 50 (2) 12 (3) 8 (4) 6

Ans: 1

17. Focal length of objective lens and eyepiece lens are 1.25 cm and 5 cm and tube length is 26 cm. Find magnification of compound microscope in normal adjustment.






Ans: 104

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