

JEE Main 2026 April 6 Shift 2 Physics

Question Paper

Conducted by National Testing Agency (NTA)



General Instructions

- (i) The test is of 3 hours duration.
- (ii) This test paper consists of 75 questions. Each subject (PCM) has 25 questions. The maximum marks are 300.
- (iii) This question paper contains Three Parts. Part-A is Physics, Part-B is Chemistry and Part-C is Mathematics. Each part has only two sections: Section-A and Section-B.
- (iv) Section - A : Attempt all questions.
- (v) Section - B : Attempt all questions.
- (vi) Section - A (01 – 20) contains 20 multiple choice questions which have only one correct answer. Each question carries +4 marks for correct answer and –1 mark for wrong answer.
- (vii) Section - B (21 – 25) contains 5 Numerical value based questions. The answer to each question should be rounded off to the nearest integer. Each question carries +4 marks for correct answer and –1 mark for wrong answer.

1. A galvanometer is used for making an ammeter of range 500 mA when a shunt of $2\ \Omega$ is used. The same galvanometer is used for making a voltmeter of range 10V when a resistance of $470\ \Omega$ is used in series. Then find the resistance of the galvanometer.

- (A) $30\ \Omega$
- (B) $50\ \Omega$
- (C) $10\ \Omega$
- (D) $100\ \Omega$

2. Find electric field, for given electrostatic potential at P(2,3), $V = 5(x^2 - y^2)$

- (A) $-20\hat{i} + 30\hat{j}$
(B) $20\hat{i} + 30\hat{j}$
(C) $30\hat{i} - 20\hat{j}$
(D) $30\hat{i} + 20\hat{j}$
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3. If minimum deviation for an equilateral prism is 30° , then refractive index of the prism is:

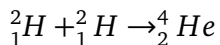
- (A) $\sqrt{2}$
(B) $\frac{\sqrt{3}}{2}$
(C) 2
(D) 4
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4. Match the following quantities with their dimensions.

(A)	Boltzman constant (K)	(P)	$[M^{-1}L^3T^{-2}]$
(B)	Plank's constant (h)	(Q)	$[M^1L^2T^{-1}]$
(C)	Stefan's constant (σ)	(R)	$[M^1L^2T^{-2}K^{-1}]$
(D)	Gravitational constant (G)	(S)	$[M^1L^0T^{-3}K^{-4}]$

- (A) A-Q, B-R, C-S, D-P
(B) A-P, B-Q, C-S, D-R
(C) A-P, B-S, C-R, D-P
(D) A-R, B-Q, C-S, D-P

5. For the reaction find energy released



BE/A for ${}^2_1\text{H} = 1.1 \text{ MeV}$ and for ${}^4_2\text{He} = 7.2 \text{ MeV}$:

- (A) 24.4 MeV
- (B) 6.2 MeV
- (C) 6.1 MeV
- (D) 8 MeV

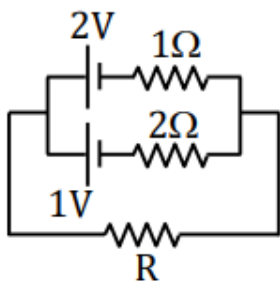
6. A square loop of side 2 cm makes angle 60° with magnetic field $\mathbf{B} = 0.4 \sin(300t) \text{ T}$. Find maximum induced EMF (in mV) in loop.

- (A) 24
- (B) 36
- (C) 48
- (D) 16

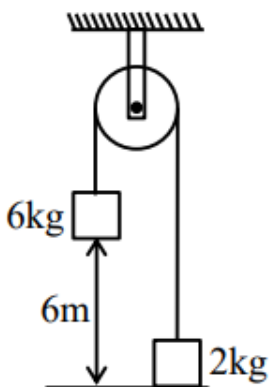
7. A charge particle when accelerated from rest by a potential difference V_1 has a de-Broglie wavelength λ_1 , and when accelerated by a potential difference V_2 has a de-Broglie wavelength λ_2 . If $\lambda_2 = \frac{3\lambda_1}{2}$, find the ratio $\frac{V_1}{V_2}$.

- (A) $\frac{9}{4}$
- (B) $\frac{4}{9}$
- (C) $\frac{2}{3}$
- (D) $\frac{3}{2}$

8. In the given circuit, current passing through R is 1 ampere. Now polarity of one cell is reversed, then current through R becomes $\frac{\alpha}{5} \text{ Amp}$, then find α .

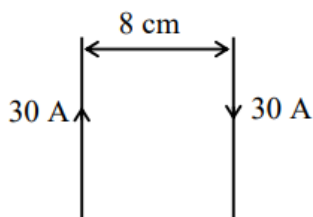


9. If a 6 kg block is released from rest as shown in the figure, then find the velocity of the 6 kg block just before hitting the ground.



- (A) 6.2 m/sec
- (B) 7.74 m/sec
- (C) 4.7 m/sec
- (D) 3.87 m/sec

10. Find magnetic field at mid point between two parallel infinite wires carrying current of 30 Amp as shown in the figure.



- (A) 0 μT
- (B) 300 μT
- (C) 150 μT
- (D) 30 μT

11. Consider two spheres A (solid sphere) and B (hollow sphere) each of radius R , kept on a perfectly rough surface. Mass of sphere A is $5m$ and that of B is $2m$. If the same force F is applied at the top tangentially, then find the ratio of acceleration of A to acceleration of B.

- (A) $\frac{5}{17}$
(B) $\frac{10}{21}$
(C) $\frac{3}{5}$
(D) $\frac{2}{7}$
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12. $C = 100 \text{ pF}$, $V = 100 \text{ V}$ (given spherical capacitor).

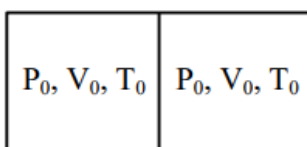
Identical capacitor is touched with this capacitor. If change in total energy is $\alpha \times 10^{-7} \text{ J}$ then find $\alpha = ?$

(Combined capacitance = 200 pF)

- (A) 2.5
(B) 25
(C) 1
(D) 10
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13. On an incline plane of angle 45° , time taken by an object is t if it is smooth and $2t$ if it is rough. Find value of α if friction coefficient is $\frac{\alpha}{100}$.

14. Figure shows an adiabatic container which is divided into two equal parts by an adiabatic freely moving piston. Both sides contain same gas having $\gamma = 1.5$. If heat is supplied to left part such that its pressure becomes $\frac{27P_0}{8}$, find volume of right part.



15. When a mass of 200 gm hangs from the ceiling via spring in equilibrium, the extension in the spring is observed to be 2mm. Find angular frequency of its SHM and energy stored in equilibrium position respectively.

- (A) $\omega = 2 \text{ rad/sec.}; U = 50\sqrt{2} \text{ mJ}$
 - (B) $\omega = 50\sqrt{2} \text{ rad/sec.}; U = 2 \text{ mJ}$
 - (C) $\omega = 100\sqrt{2} \text{ rad/sec.}; U = 4 \text{ mJ}$
 - (D) $\omega = 25\sqrt{2} \text{ rad/sec.}; U = 1 \text{ mJ}$
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16. An EM wave has angular frequency ω .

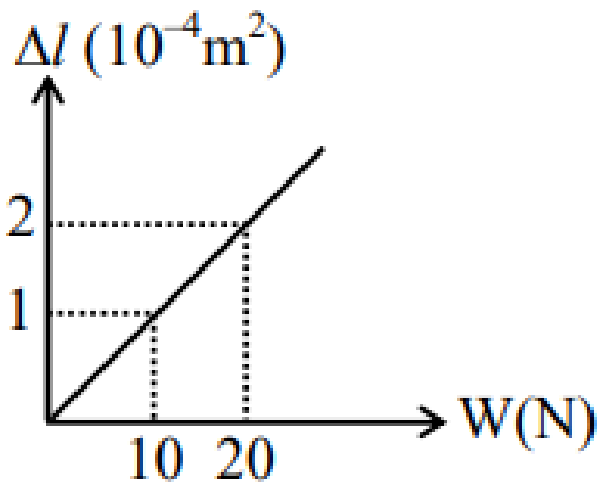
Propagation constant k and electric field vector E is given, then B can be represented by:

- (A) $B = \omega(K \times E)$
 - (B) $B = \omega(E \times K)$
 - (C) $B = \frac{1}{\omega}(K \times E)$
 - (D) $B = \frac{1}{\omega}(E \times K)$
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17. In YDSE, intensity of both coherent sources are I_0 . Separation between the two slits is 5 cm and screen is placed at a distance of 50 cm from the slit. Wavelength of light is 6000 \AA . If intensity for a point on the screen is I_0 , then find the path difference at point P

- (A) 1000 \AA
 - (B) 2000 \AA
 - (C) 3000 \AA
 - (D) 5000 \AA
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18. A weight W is connected to one end of a wire and the other end is fixed, length of wire is 1m. Area of cross-section is 10^{-5} m^2 . Graph between change in length and weight is shown. Then calculate Young's modulus.



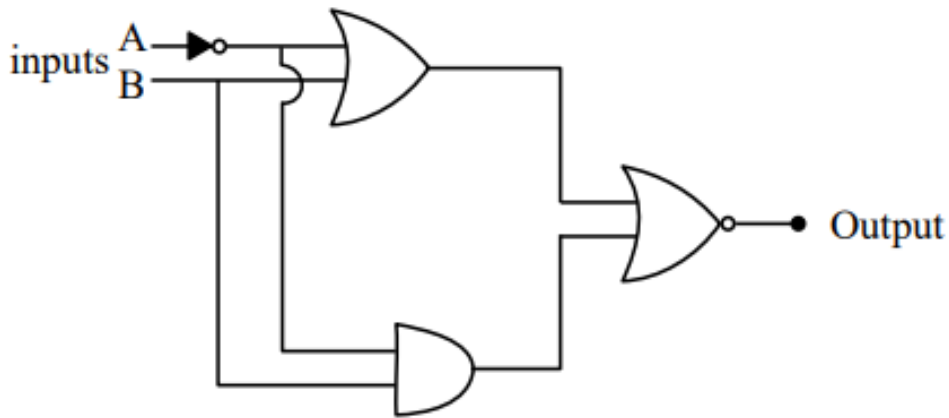
- (A) 10^{11} N/m^2
- (B) 10^9 N/m^2
- (C) 10^8 N/m^2
- (D) 10^{10} N/m^2

19. 2 moles of monoatomic ideal gas has temperature T and 6 moles of monoatomic ideal gas has temperature $2T$. Find the temperature of mixture.

- (A) $\frac{7T}{4}$
- (B) $\frac{3T}{4}$
- (C) $\frac{4T}{4}$
- (D) $7T$

20. If error in diameter of a sphere is 2%, then find error in volume of the sphere.

21. Which of the following is correct outputs for inputs (1, 1) and (0, 1)?



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

22. For a concave mirror of focal length 10cm, magnification is 2 for two positions of an object. Find the distance between these two positions (in cm).

23. A block of mass 1 kg moving with velocity varies according to position as $v = 2x^2$. If the block goes from $x = 0$ to $x = 5$, find the work done by the block.

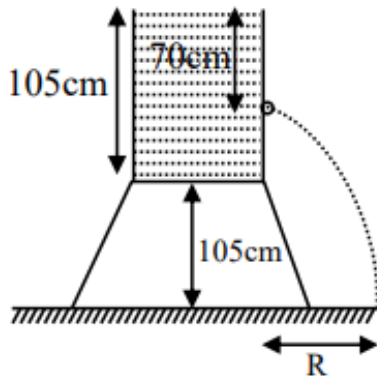
- (A) zero
- (B) 1250 J
- (C) 1000 J
- (D) 750 J

24. Two particles of the same masses moving initially with velocity $4\hat{i}$ and $4\hat{j}$ m/s respectively. Acceleration of the first particle is $6\hat{i} + 6\hat{j}$ and of the second is zero. Find the path of the center of mass of the two particles.

- (A) straight line
- (B) circle
- (C) parabola

(D) ellipse

25. A cylindrical container has radius 40 cm and volume $528 \text{ (dm}^3\text{)}$. It is placed on a table of same height as of container. A hole is made 70 cm below from the free surface. Find range of efflux on ground if the container is filled completely.



- (A) $280\sqrt{2}$ cm
 - (B) $140\sqrt{2}$ cm
 - (C) 140 cm
 - (D) 280 cm
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