JEE Main 2026 April 2 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. For given Atwood machine. Find displacement (in m) of centre of mass after 2 sec of release.

(1) $\frac{20}{9}$ (Downward)

(2) $\frac{20}{9}$ (Upward)

(3) $\frac{10}{9}$ (Downward)

(4) $\frac{10}{9}$ (Upward)

2. At any instant, if $\vec{B} = -2 \times 10^{-7}\hat{j}$ T and $\vec{C}$ is along the +x axis, then $\vec{E}$ at this instant is:

(1) 60 $\hat{k}$ V/m

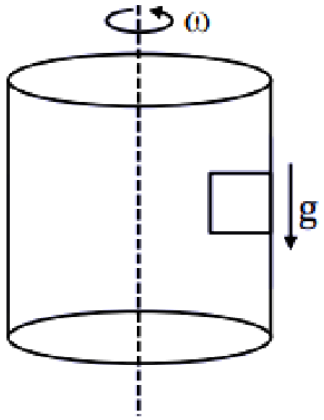
(2)45$\hat{k}$ V/m

(3)90$\hat{k}$ V/m

(4)30$\hat{k}$ V/m

---

3. A hollow cylinder of radius 1m is rotating with angular velocity $\omega = 10$ rad/sec. Find minimum coefficient of friction μ so that the block remains at rest w.r.t. the cylinder.



(1) 0.1

(2) 0.2

(3) 0.15

(4) 0.25

---

4. An air bubble of radius 1 mm is rising up with constant speed of 0.5 cm/s in a liquid of density $\rho_{liq} = 2000\,kg/m^3$. Find the coefficient of viscosity η in poise.

(1) $\frac{70}{9}$ poise

(2) 20 poise

(3) $\frac{80}{9}$ poise

(4) 50 poise

5. Work function for an object is 2.3 eV. If maximum kinetic energy of ejected electrons is 0.18 eV, find wavelength λ of incident photon on object.

(1) 200 nm

(2) 500 nm

(3) 250 nm

(4) 300 nm

---

6. Position of a particle is given by $x = A\sin\left(50t + \frac{\pi}{3}\right)$. If speed and acceleration become 0 for the first time at t_1 and t_2 sec respectively, then find t_1 and t_2 (in sec):

(1) $\frac{\pi}{300}, \frac{\pi}{75}$

(2) $\frac{\pi}{300}, \frac{\pi}{150}$

(3) $\frac{\pi}{150}, \frac{\pi}{75}$

(4) $\frac{\pi}{150}, \frac{\pi}{300}$

---

7. Find $\frac{BE}{A}$ of $^{83}Bi^{209}$.

Given: $M_{\text{Bi}} = 208.9804\,\text{amu}$, $m_p = 1.007276\,\text{amu}$, $m_n = 1.008665\,\text{amu}$, $1\,\text{amu} = 931\,\text{MeV}$

(1) 5.8908729 MeV/A

(2) 3.0008729 MeV/A

(3) 4.2506229 MeV/A

(4) 7.6408729 MeV/A

---

8. A screw gauge has a pitch of 0.1 mm and 100 divisions on its circular scale. When its both jaws touch, the fifth division of its circular scale coincides with zero. When a sphere is placed

between the jaws, the reading of the linear scale is 5 mm and the 50th division of the circular scale coincides with zero of the main scale. Find the diameter of the sphere.

(1) 5.55 mm

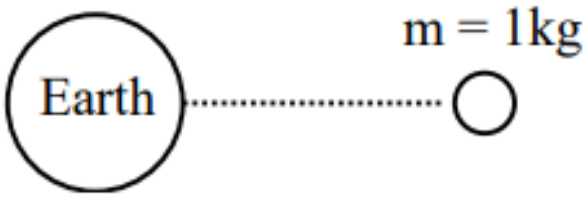
(2) 5.45 mm

(3) 5.056 mm

(4) 5.045 mm

---

9. Find speed of 1 kg object when it reaches close to Earth's surface from a long distance after it is released from rest as shown in the diagram. [Given $R_e = 6400\,\text{km}, g_s = 9.8\,\text{m/s}^2$]



(1) 12.5 km/s

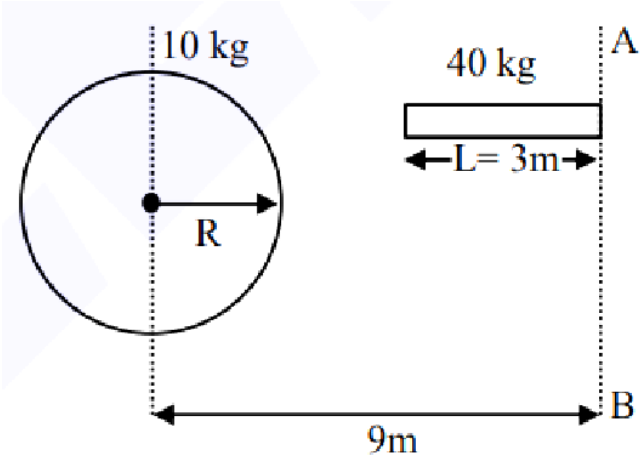
(2) 11.2 km/s

(3) 9.8 km/s

(4) 2.4 km/s

---

10. If moment of inertia of rod about axis AB is equal to moment of inertia of solid sphere about an axis parallel to AB which is at 9m from AB axis as shown in the figure. If $R = \frac{\alpha}{2}$, then find α.



---

11. Surface tension of soap bubble is 0.03 N/m. The work done in increasing the diameter of bubble from 2 cm to 6 cm is $\alpha\pi \times 10^{-4}$ J. Find the value of α.

---

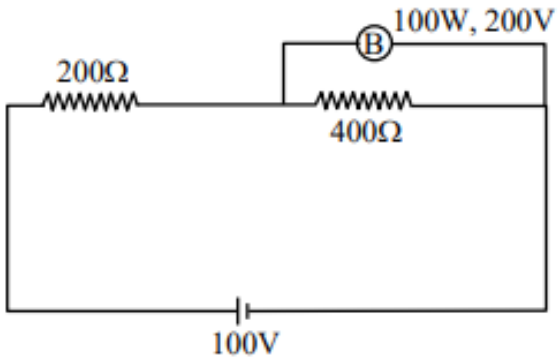
12. A paper is placed in front of lens at a distance 30 cm, such that paper gets burned in minimum time. Radius of curvature of bi-convex lens is 60 cm. If refractive index of lens is $\mu = \frac{\alpha}{10}$, then value of α is?

---

13. Consider Bohr's model of a H-atom. If magnetic field at center due to electron in 2^n orbit is B_1, and magnetic field due to electron in 4^t orbit is B_2. Find $\frac{B_1}{B_2}$.

---

14. Find potential difference across bulb as shown in the figure.



---

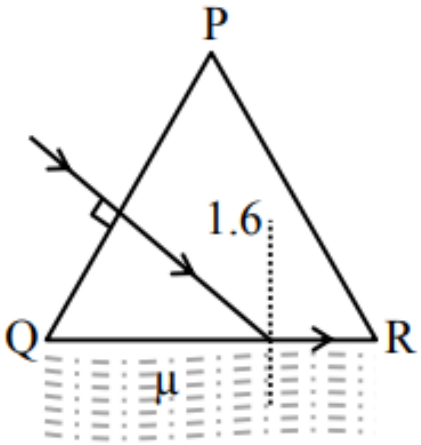
15. Force on a charge $q = 10^{-9}$ C in uniform electric and magnetic field is $\vec{F} = (2 \times 10^{-10}\hat{i} + 3 \times 10^{-10}\hat{j})$ N.

Find velocity (in m/s) of charge if value of electric field is $0.4\hat{j}$ V/m and magnetic field is $2 \times 10^{-3}\hat{k}$ T.

(1) $\vec{V} = 50\hat{i} + 100\hat{j}$ m/s
(2) $\vec{V} = 100\hat{i} + 100\hat{j}$ m/s
(3) $\vec{V} = 50\hat{i} + 50\hat{j}$ m/s
(4) $\vec{V} = 50\hat{i} + 10\hat{j}$ m/s

---

16. There is a thin layer of refractive index μ below the base of an equilateral prism. The path of a ray is shown in the figure. Find out μ.



(1) 1.38
(2) 1.52
(3) 1.414
(4) 1.23

---

17. If G is the Gravitational constant and h is Planck's constant, then the dimension of G is:

(1) $[M^{-2}L^{1}T^{-1}h^{2}]$

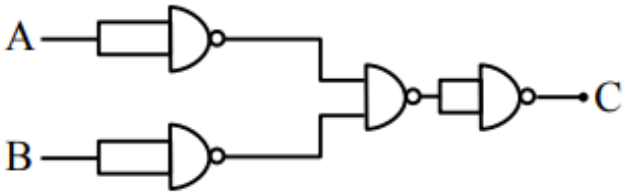
(2) $[M^{-2}L^{3}T^{-1}h^{1}]$

(3) $[M^{-1}LT^{-3}h^{3}]$

(4) $[M^{-2}LT^{-1}]$

---

18. For given logic gate circuit, an equivalent gate will be



(1) OR gate

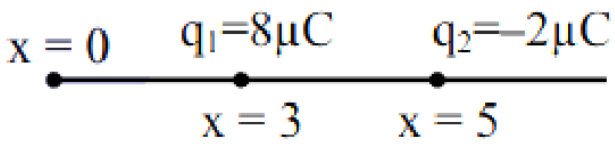
(2) AND gate

(3) NAND gate

(4) NOR gate

---

19. Find the ratio of electric flux passing through two spheres centered at the origin, having radii 4 m and 6 m respectively, with charges $q_1 = 8\,\mu C$ and $q_2 = 2\,\mu C$ respectively.



(1) 2.36

(2) 1.33

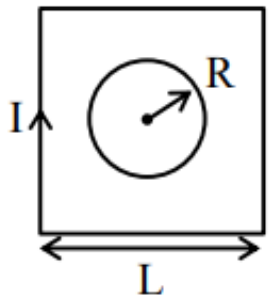
(3) 5.72

(4) 6.83

---

20. Side of square is L and $R \ll L$.

Find mutual inductance of the system shown in the figure.



(1) $\frac{\sqrt{2\mu_0}R^2}{L}$

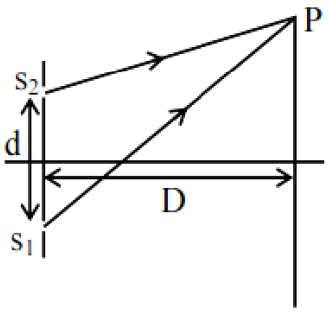
(2) $\frac{4\sqrt{2\mu_0}R^2}{L}$

(3) $\frac{2\mu_0R^2}{L}$

(4) $\frac{2\sqrt{2\mu_0}R^2}{L}$

---

21. As shown in the figure in YDSE experiment, if intensity is $\frac{3}{4}$ of maximum intensity at point P, and path difference at point 'P' is $\Delta x = \frac{\lambda}{\alpha}$. Find the value of "". (where λ is wavelength of light)



(1) 4

(2) 6

(3) 5

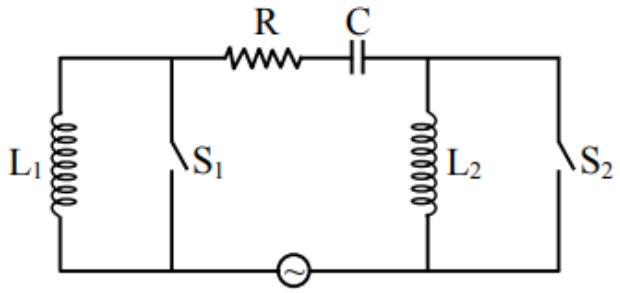
(4) 2

---

22. An ideal gas of 5 moles has $C_p = 8$ cal/mol°C. If its temperature changes from 10°C to 20°C, then calculate the change in its internal energy (in cal).

---

23. If S_1 is closed and S_2 open, θ is 30° and if S_1 is open and S_2 closed then θ is 60°. Then find $3L_2 - L_1$, if $C = 100\mu F$.



---

24. A small ball of mass 1 kg is released from a height of 20 m on the sand. It penetrates 10 cm in the sand and comes to rest. Find the average force exerted by the sand on the ball. (g = 10 m/s^2)

(1) 1000 N

(2) 1980 N

(3) 2010 N

(4) 2020 N
