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# JEE (MAIN) 2026

## MEMORY BASED QUESTIONS & TEXT SOLUTION

**SHIFT-2**

**DATE & DAY:** 28th January 2026 & Wednesday

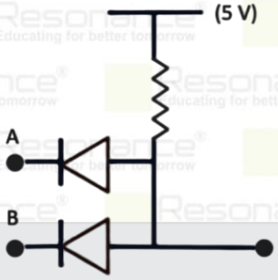
**PAPER-1**

**Duration:** 3 Hrs.
**Time:** 03:00 PM – 06:00 PM

## SUBJECT: PHYSICS

# PART : PHYSICS

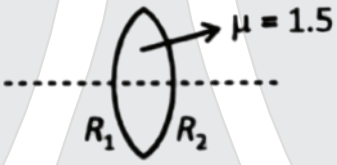
**1.** For the circuit given below, identify the logic gate.




(1) NAND (2) AND (3) NOR (4) OR

**Ans. (2)**

**2.** Object is placed at distance 30 cm from lens given below, then distance of image from lens is ( $R_1 = 10$ cm, $R_2 = 20$ cm )




(1) 20 cm (2) 36 cm (3)30 cm (4) 24 cm

**Ans. (4)**

**3.** If position vector is given as $\vec{r} = x\hat{\imath} + y\hat{\jmath} + z\hat{k}$ and if its signs are reversed then which of the following physical quantity remains unaffected?

(1) Torque (2) Displacement (3) Acceleration (4) Velocity

**Ans. (1)**

**4.** If the mass number of nucleus is $\alpha$, its radius is $R_\alpha$. And another mass number is $\beta$ then its radius is $R_\beta$; then $R_\alpha/R_\beta = ?$ [Given $\beta = 8\alpha$ ]

(1) 1/2 (2) 1 (3) 2 (4) 8

**Ans. (1)**

**5.** Which of following physical quantity is not measurable?

(1) Voltage difference (2) Displacement
(3) Acceleration (4) Voltage

**Ans. (4)**

**6.** Two light sources of 450 nm and 550 nm are used for YDSE with slit distance 2.25 mm and distance between the slits and screen is 1.5 m . Then the distance from central maxima for which minima of both wavelength coincide?

(1) 1.30 mm (2) 1.40 mm (3) 1.20 mm (4) 1.65 mm

**Ans. (4)**

**7.** A beam of power $2\mu$ W is hitting a metal surface. Beam contains photons of wavelength 662 nm .Find number of photons striking per second.

(1) $6.67 \times 10^{12}$ (2) $4 \times 10^{11}$ (3) $2 \times 10^{14}$ (4) $3.2 \times 10^{13}$

**Ans. (1)**

**8.** Measurement taken with Vernier Caliper are as follows

1.21 mm
1.23 mm
1.24 mm
1.20 mm

What can be least count?

(1) 0.1 mm (2) 0.01 mm (3) 0.001 mm (4) 0.0001 mm

**Ans. (2)**

**9.** Mean free path of gas particles of diameter $5\text{Å}$ at temperature and pressure of $41^\circ\text{C}$ and $1.38 \times 10^5$ Pa.

(1) 14.14 nm (2) 20 nm (3) 28.28 nm (4)10 nm

**Ans. (3)**

**10.** A block of mass $m$ is placed on a smooth inclined plane making an angle $\theta$ with the horizontal. The inclined plane itself is accelerating horizontally with constant acceleration $A_0$ Find the time taken by the block to reach the bottom of the incline (length = L)

(1) $\sqrt{\frac{2l}{A_0\cos\theta+g\sin\theta}}$ (2) $\sqrt{\frac{2l}{g\sin\theta}}$ (3) $\sqrt{\frac{2l}{(A_0+g)\sin\theta}}$ (4) $\sqrt{\frac{2l}{A_0\sin\theta+g\cos\theta}}$

**Ans. (1)**

**11.** Consider the following electromagnetic waves

Wave length of $A = 400$ nm.
Frequency of $B = 10^{16}\text{sec}^{-1}$.
Wave number of $C = 10^4\ \text{cm}^{-1}$.
Order of energies is:

(1) $A > B > C$ (2) $B > A > C$ (3) $B > C > A$ (4) $C > A > B$

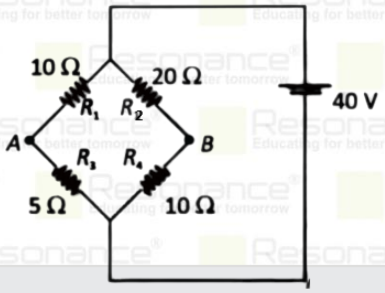
**Ans. (2)**

**12.** Find the percentage error in $K$, where $T = 2\pi\sqrt{\frac{m}{K}}$. Given that 60 oscillations completes in 50 second. Time resolution is 2 second, $m = 10$ g and $\Delta m = \pm 10$mg.

(1) 8% (2) 9% (3) 9.1% (4) 8.1%

**Ans. (4)**

**13.** In a balanced Wheatstone bridge $R_2R_3 : R_1R_4$. Because of heating $R_3$ increases by 20%. Then potential difference across A and B becomes




(1) 1.50 V (2) 2.40 V (3) 3.60 V (4) 1.67 V

**Ans. (4)**

**14.** Match the two columns and choose the correct option

| Column-I | | Column-II | |
|---|---|---|---|
| (a) | Coefficient of viscosity | (p) | $[ML^0T^{-2}]$ |
| (b) | Surface tension | (q) | $[ML^{-1}T^{-2}]$ |
| (c) | Pressure | (r) | $[ML^2T^{-2}]$ |
| (d) | Work | (s) | $[ML^{-1}T^{-1}]$ |

(1) (a)-(p), (b)-(q), (c)-(r), (d)-(s) (2) (a)-(s), (b)-(p), (c)-(q), (d)-(r)
(3) (a)-(q), (b)-(s), (c)-(p), (d)-(r) (4) (a)-(p), (b)-(q), (c)-(s), (d)-(r)

**Ans. (2)**

**15.** Given that $v = \sqrt{\frac{Y}{P}}$. Find the maximum % error in v . Given that $\frac{\Delta Y}{Y} \times 100 = 1\%$ and $\frac{\Delta P}{P} \times 100 = 0.5\%$

(1) $\frac{3}{2}\%$ (2) $\frac{3}{4}\%$ (3) $\frac{1}{2}\%$ (4) 1%

**Ans. (2)**

**16.** Electric field of an EM wave is given as $\vec{E} = 54\sin(kz - \omega t)\hat{\imath}$. Then what will be its corresponding magnetic field ?

(1) $18 \times 10^{-8}(\text{kz} - \omega\text{t})\hat{\jmath}$ (2) $54 \times 10^{-8}\sin(\text{kz} - \omega\text{t})\hat{\imath}$
(3) $162 \times 10^{8}\sin(\text{kz} - \omega\text{t})\hat{\jmath}$ (4) $18 \times 10^{-8}\sin(\omega t - kz)\hat{\jmath}$

**Ans. (1)**

**17.** (I) Gauss Law is defined for inverse square of distance forces.
(II) Work done by uniform electric field on a charge moving in a circle is zero.
(III) Electric field of a point-charge forms concentric circle around it.
(IV) Electric field line forms closed loop.
Choose correct option(s).

(1) I,II (2) I,III (3) III,IV (4) I,IV

**Ans. (1)**

**18.** A current is flowing along the surface of long solid cylinder of radius R. Select correct statement :

I. $B_{min}$ along Axis

II. $B_{min}$ at surface

III. $B_{max}$ at surface

IV. $B_{max}$ at Axis

V. B is same at all over cross section

(1) I, IV (2) I, III (3) I, II, III, IV (4) All

**Ans. (2)**

**19.** For particle moving in $x$ direction according to relation, $x = 4t^3 - 3t$

(a) at $t = 0.866\ S, x = 0$

(b) direction of particle remains same

(c) direction of particle change at $x = -1$

(d) direction of particle change at $x = 0.5\ m$

(e) acceleration is non-negative

Correct statements are :

(1) a,c,e (2) a,b,c (3) $a, b$ (4) $a, b, c, d$

**Ans. (1)**