SINCE 1984

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STUDY CENTRE, PALA

JEE MAIN 2026

SESSION-2
SHIFT-2 EVENING

VIDEO SOLUTION

APRIL 02, 2026
THURSDAY

SCAN ME

MEMORY BASED QUESTIONS

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Ph - 04822 206416, 206516, 206459
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02-04-2026

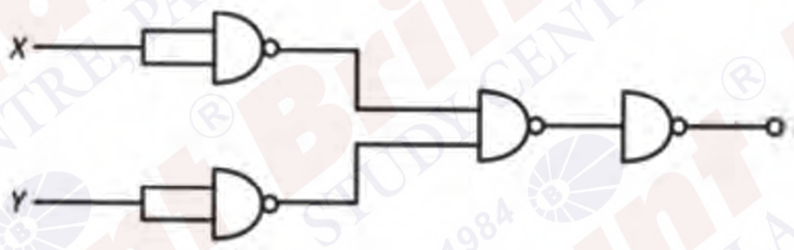
SHIFT 2-EVENING

MEMORY BASED QUESTIONS

PHYSICS

QN 

for given system, find disp of COM after 2 sec.

QN 

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

QN A soap bubble of radius r = 1mm, liquid of density $\rho_1 = 2000 kg/m^3$. At the instant bubble is rising upward width constant velocity $v = \frac{1}{2} cm/s$. Find coefficient of viscosity (η)

1) $\frac{2}{9} N-S/m^2$ 2) $\frac{4}{9} N-S/m^2$ 3) $\frac{2}{3} N-S/m^2$ 4) $\frac{8}{9} N-S/m^2$

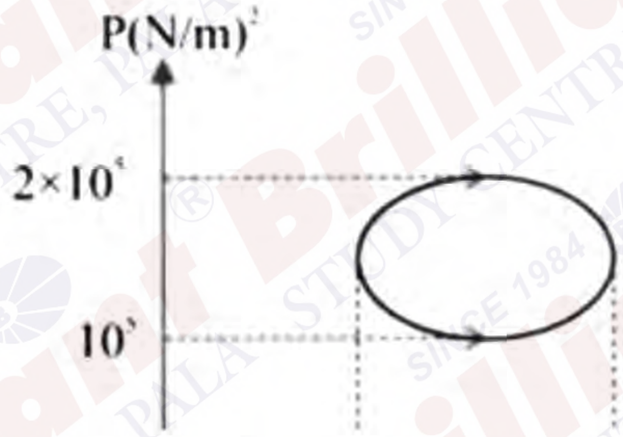
QN Dimensions of G (universal gravitational constant) in terms of h (Plank's constant), m (mass) and t (time) and L (length) will be

1) $h^{-1}Lm^{-2}t$ 2) $hL^{-1}m^2t$ 3) $hLm^{-2}t^{-1}$ 4) $h^{-1}L^{-1}m^2t^{-1}$

QN Position of a paraticle is given by $x = a\sin(50t + \pi/3)$. If speed and acceleration is zero for the first time at time t_1 & respectively. Then t_1 & t_2 are

1) $\frac{\pi}{150}, \frac{\pi}{300}$ 2) $\frac{\pi}{300}, \frac{\pi}{75}$ 3) $\frac{\pi}{50}, \frac{\pi}{150}$ 4) $\frac{\pi}{300}, \frac{\pi}{150}$

QN For the cyclic process (elliptical work done by the gas is

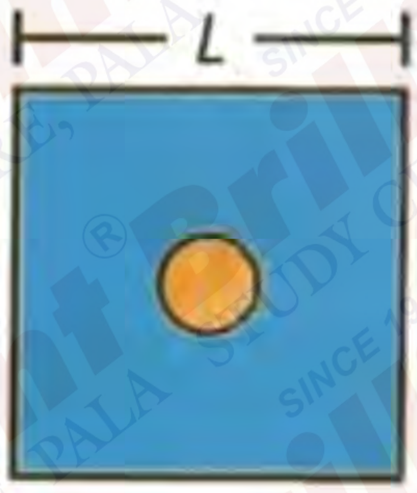


1) $2\pi \times 10^5 J$ 2) $8\pi \times 10^5 J$ 3) $20\pi \times 10^5 J$ 4) $12\pi \times 10^5 J$

QN In Bohr's atomic model. Find ratio of magnetic field produced at center by electron in 2nd orbit and 4th orbit

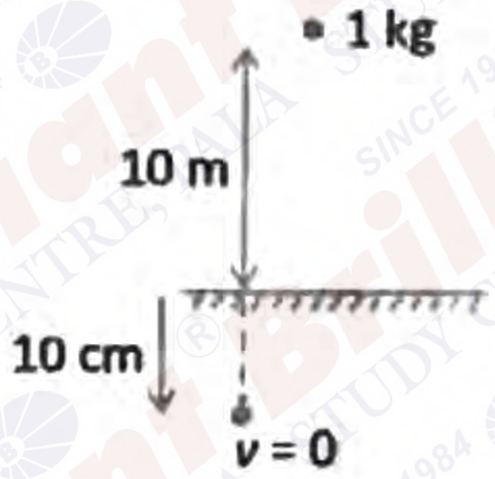
1) 8 2) 4 3) 32 4) 16

QN A small circular loop of radius r is completely closed within a large square loop of length L. Both of loops are concentric and co-planer. (Also L>>r). Find co-efficient of mutual induction



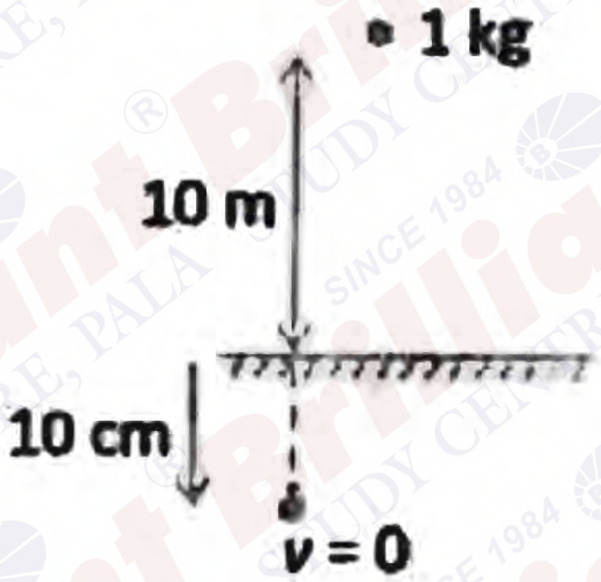
1) $M = \frac{\mu_o r^2 2\sqrt{2}}{L}$ 2) $M = \frac{\mu_o L^2}{\sqrt{2}r}$ 3) $M = \frac{2\mu_o r^2}{L}$ 4) $M = \frac{\mu_o r^2}{2L}$

QN A ball is released from rest as shown in figure. Ball comes to rest after moving 10cm below the surface. Find average force applied by the floor material



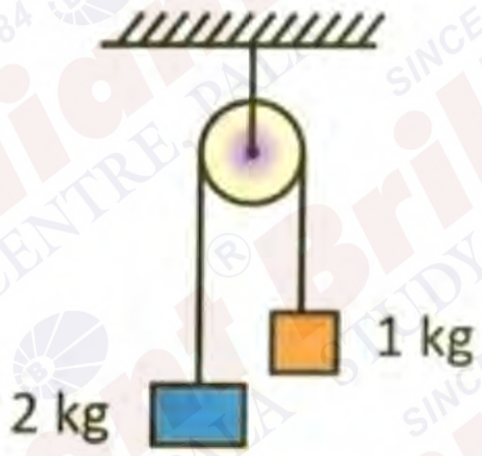
1) 800N 2) 1000N 3) 500N 4) 1200N

QN A ball is released from rest as shown in figure. Ball comes to rest after moving 10cm below the surface. Find average force applied by the floor material



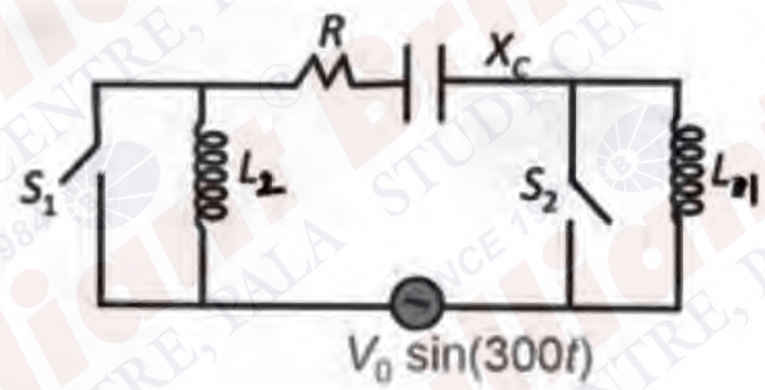
1) 800N 2) 1000N 3) 500N 4) 1200N

QN Find displacement of center of mass after t = 2 sec



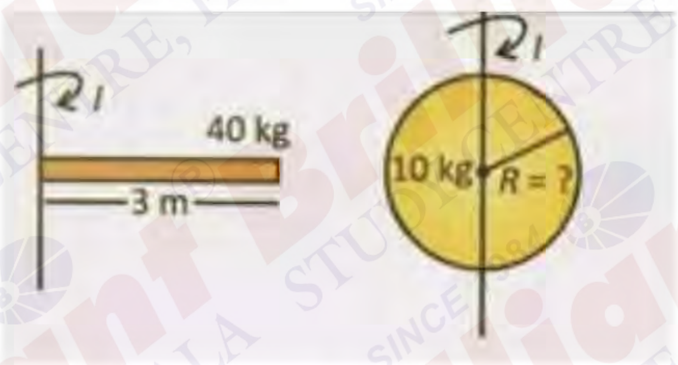
1) 20/9 2) 10/9 3) 25/9 4) 5/9

QN M a given AC circuit if only switch S_1 is closed then phase difference is 30° while only if only switch S_2 is closed then phase difference is 60°. Current lags in both cases. If Xc = 30Ω then $3L_1 - L_2$ is



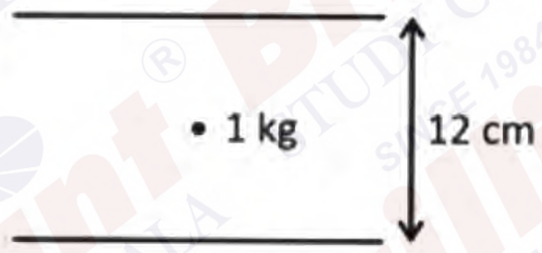
1) 0.3H 2) 0.5H 3) 0.2H 4) 10H

QN A rod of length 3m and ass 40kg has same moment of inertia as that of solid sphere. Find radius of solid sphere.



1) 5/2 2) $\sqrt{30}$ 3) 3/2 4) $\sqrt{5}$

QN A ball of mass 1 kg and charge 9 nC is in equilibrium between two parallel plates. Find potential difference between the plates.



1. 24×10^3 V
2. $\frac{4}{3} \times 10^8$ V
3. 6×10^6 V
4. 12×10^5 V

QN A point mass just starts approprcting earth from a large distance. Speed of impact of point of mass to planet's surface is ——(Planet is g times heavier and with radius 4 times compared to earth]

1. 25 km/s
2. 10 km/s
3. 17 km/s
4. 5 km/s

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SHIFT 2-EVENING

MEMORY BASED QUESTIONS

CHEMISTRY

QN Arrange following complexes in increasing order of CFSE (Δ_o)

a) $[Co(H_2O)_6]^{2+}$ b) $[Co(H_2O)_6]^{3+}$ c) $[Co(en)_3]^{3+}$

1) c > a > b 2) c > b > a 3) a > b > c 4) b > a > c

QN Consider the reaction given below :

A gives positive Fehling's test. Choose the correct relation.

1. Molar weight of A and molar weight of B are same
2. Molar weight of A is greater than molar weight of B
3. Molar weight of B is greater than molar weight of A
4. None of these

QN 20 mL of 0.2 M HA (weak monoprotic acid) is titrated with 10 mL of 0.2 M NaOH solution. pH of solution at 25°C is, (pK_a of weak acid is 4.76)

20 mL of 0.2M HA
10 mL of 0.2M NaOH

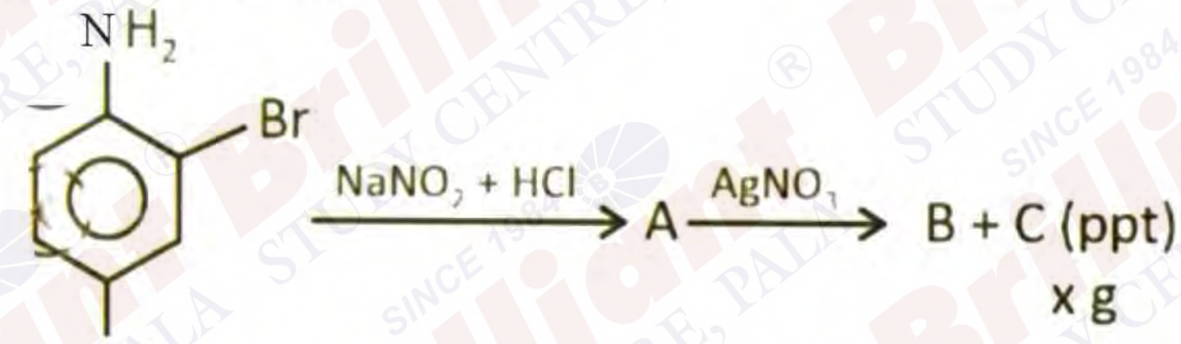
1. 9.24
2. 5.24
3. 4.76
4. 9.76

QN Molarity of H_2SO_4 solution is 4.9 M. If density of solution is 1.40g/ml, then molality and mole fraction of solute in solution is

1) m = 5.34, X_{solute} = 0.088 2) m = 5.34, X_{solute} = 0.072

3) m = 5.21, X_{solute} = 0.088 4) m = 5.21, X_{solute} = 0.072

QN



is a white curdy ppt. Find 10(x) (Nearest integer)

QN In Bohr's atomic model. Find ratio of magnetic field produced at center by electron in 2nd orbit and 4th orbit

1) 8 2) 4 3) 32 4) 16

QN SF_4 is isostructural with

i) XeO_2F_2 ii) CH_4 iii) IF_4^+ iv) BrF_4^-

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

QN For the reaction $2A \rightarrow 4B + C$. At 30 minutest the total pressure is 300mm of Hg and after infinite time the total pressure is 600mm of Hg. Then the pressure of C at t = 30 minutes will be

1) 20mmHg 2) 40mmHg 3) 60mmHg 4) 10mmHg

QN Two solutions of protein (M.Wf = 50,000g) are prepared separately

Solution A: 1g protein in 0.5L solution

Solution B: 2g protein in 1.0L solution

When the two solutions are mixed at 300K. Find total osmotic pressure = 0.08Lit -atmK^{-1} mol^{-1}

1) 9.8×10^{-3} torr 2) 6.5×10^{-2} torr 3) 7.3×10^{-3} torr 4) 5.4×10^{-4} torr

QN The work function of Na metal is 2.3eV. If maximum kinetic energy of emitted photoelectron is 2.8×10^{-19} J, then calculate wavelength of incident photon in nm

QN The $[HA^-]$ concentration in a mixture containing 0.1M H_2A and 0.1M HCl is $X \times 10^{-9}$. Value of x is [Given: $Ka_1 = 10^{-8}$ and $Ka_2 = 10^{-13}$ for H_2A]

QN Given below are two statements

Statement I: Order of second ionisation energy is B > Al > Ga

Statement II: Order of first ionisation energy is B > Ga > Tl > Al > In

1 Both statement I and statement II are correct

2 Statement I is correct but statement II is incorrect

3 Statement I is incorrect but statement II is correct

4 Both statement I and statement II are incorrect

QN Correct order of enthalpy of atomisation is

1 $N_2 > O_2 > F_2 > Cl_2 > Br_2 > I_2$

2 $N_2 > O_2 > Cl_2 > F_2 > Br_2 > I_2$

3 $N_2 > O_2 > Cl_2 > Br_2 > F_2 > I_2$

4 $N_2 > O_2 > F_2 > Br_2 > Cl_2 > I_2$

QN Which of the ion having highest ionisation energy will give borax bead test.

1 Fe^{2+}

2 Fe^{3+}

3 Cr^{3+}

4 Zn^{2+}

QN **Which of following to complex as will show co-ordination isomerism?**

A) $[Ag(NH_3)_2]\ [Ag(CN)_2]$

B) $[Co(NH_3)_6][Cr(CN)_6]$

C) $[Co(NH_3)_6]\ [Co(CN)_6]$

D) $[Fe(NH_3)_6]\ [Co(CN)_6]$

E) $[Co(NH_3)_6][\ FeCN]_6)$

a) *C, D* and E only b) *B, D* and E c) B, C and D d) *A*, C and D

QN The complete combustion of x gram of an organic compound gave 0.25g of CO_2 and 0.12g of H_2O. If the % of carbon is 25% and of hydrogen is 4.89% then x = ——— x 10^{-3}g (Near integer) (molar mass of C:H and our 12,1 and 16g mol^{-1} respectively.

1) 273 2) 27.30 3) 227 4) 27

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MATHEMATICS

QN The value of the sum $\sum_{n=1}^{8} \frac{1^3 + 2^3 + ... + \text{up n terms}}{1 + 3 + 5 + ...\text{upto n terms}}$ is

QN Consider two A.P.s such that A . $P_{.1}$ has 1st 1, common difference 5 and total terms 101 and A.$P_{.2}$ has 1st term 9, common difference 7 and total terms 71then the number of common terms which appear in both these A.P.s.

QN f(x) is 5 degree polynomial has extremes at x = $x = \pm 1$ and $\lim_{x \to 0} \frac{f(x)}{x^3} = 5$, then f (2) – f(–2) is

QN If ${}^{30}C_{30} + 3\left({}^{30}C_{31-r}\right) + 3\left({}^{30}C_{32-r}\right) + {}^{30}C_{33-r} = {}^{m}C_{r} \forall r \in \{0,1,....30\}$ then m is equal to

QN If P_n denotes the number of triangles formed by the vertices of n - sides polygon and $P_{n+1} - P_n = 66$, then n is

QN $\int_0^{20\pi} \left(\sin^2 x + \cos^4 x\right) dx =$

QN Let $x_1, x_2, x_3 .... x_n$ be 'n' observations such that $\sum_{i=1}^{n-1} x_i = 48$ and $\sum_{i=1}^{n-1} x_i^2 = 496$ standard deviation are 8 and 16 respectively then value of n is

QN If $A = \begin{bmatrix} 2 & -2 \\ 4 & -2 \end{bmatrix}$, $B = \begin{Bmatrix} 3 & 3 \\ 1 & 9 \end{Bmatrix}$ and PA= B and AQ = B, then $2(P + Q)$

QN If f (x) = $\int \frac{16x + 24}{x^2 + 2x - 15} dx$, given that f(4) = 14 ℓn 3, then the value of f(17)

QN If x = x(y) satisfies $2y^3 \frac{dx}{dy} - 2xy + x^2 = 0, y > 1, x(e) = e$. Then x ($e^2$)=———