NEW STANDARD ACADEMY

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CLASS 11 (Physics) DPP (Academy)14-05-2024

1. Two ball are thrown from the top of a tower Simultaneously in horizontal and vertical directions respectively . the two balls will reach the earth
   a) Simultaneously b) Depending upon their masses
   c) at different time d) Information is incomplete

2. Which one of the following statement is false?
   a) A body can have zero velocity and still be accelerated.
   b) A body can have a constant velocity and still have varying speed.
   c) A body can have a constant speed and still have varying velocity.
   d) The direction of the velocity of a body can change when its acceleration is constant.

3. A particle covers 150 m in 8^{th} second starting from rest its acceleration is
   a) 20 ms^{-2} b) !5 ms^{-2}
   c) 10 ms^{-2} d) 8 ms^{-2}

4. Aball thrown vertically upwards returns to the point of projection in 6s. the velocity of the ball is nearly
   a) 72kmh^{-1} b) 36 kmh^{-1}
   c) 108 kmh^{-1} d) 18 kmh^{-1}

5. The velocity of a body under the the influence of uniform acceleration becomes zero in one hour . the corresponding distance covered is 39 m. The distance covered by thebody in next one hour will be
   a) 39m b) 78m
   c) 12m d) zero

6. A particle moves in a straight line so that its displacement x(m) in t(s) is given by $x^2=t^2+1$. Its acceleration in ms^{-2}
   a) $\frac{1}{x^3}$ b) $-\frac{t^2}{x^2}$
   c) $\frac{1}{x}-\frac{1}{x^2}$ d)) $-\frac{t^2}{x^3}$

7. The motion of particle along a straight line is described by equation $x=8+12t-t^3$ where x is in metre amd t in second. The retaedation of the particle when its velocity becomes zero is
   a) 24 ms^{-2} b) zero
   b) 6 ms^{-2} d) 12 ms^{-2}

8. A small block slides down on a smooth inclined plane,starting from rest at time t=0. Let Sn be the distance travelled by the block in the interval t= n-1 to t=n then ,the ratio $\frac{S_n}{S_n+1}$ is
   a) $\frac{2n-1}{2n}$ b) $\frac{2n-1}{2n+1}$
   c) $\frac{2n+1}{2n-1}$ d) $\frac{2n}{2n-1}$

9. AN object, moving with a speed of 6.25m/s, is decelerated at a rate given by $\frac{d\vartheta}{dt}=-2.5\sqrt{\vartheta}$ where v is the instantaneous speed . the time taken by the object ,to come to rest would be
   a) 1s b) 2s
   c) 4s d) 8s.

10. Acar moving with a speed of 50 km h^{-1} can be stopped by applying brakes over a distance of 6 m. If the same car is moving at a speed of 100 kmh^{-1} , the stopping distance is
    a) 12m b) 18m
    c) 6m d) 24m.

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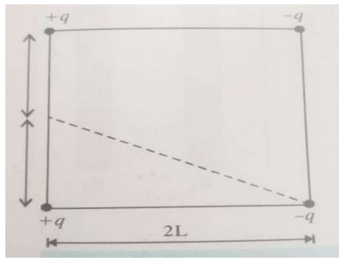
CLASS 12 (Physics) DPP (Academy)14-05-2024

1. A parallel plate condenser has uniform electric field E(V/m) I n the space between the plates. If the distance betweenthe plates is d(m) and area of each plate is A(m^2) the energy (Joule) Stored in the capacitor is

   a) $\frac{1}{2}\in_0 E^2$ b) $\in_0 EAd$

   c) $\frac{1}{2}\in_0 E^2 AD$ d) $\frac{E^2\,\mathrm{Ad}}{\in_0}$

2. Four electric charge +q,+q,-q and –q are placed at the corners of a squre of side 2L the electric potential at a point A, Midway between Type equation here.two charges +q and +q ,is

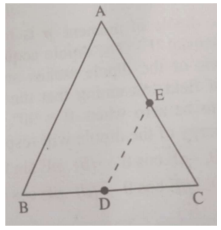
   a) $\frac{1}{4\pi\epsilon_0}\frac{2q}{L}\left[1+\frac{1}{\sqrt{5}}\right]$

   b) $\frac{1}{4\pi\epsilon_0}\frac{2q}{L}\left[1-\frac{1}{\sqrt{5}}\right]$

   c) Zero

   d) $\frac{1}{4\pi\epsilon_0}\frac{2q}{L}\left[1+\sqrt{5}\right]$

3. Three charges each +q are placed at the corners of an isosceles triangle ABC of sides BC and AC , each equal to 2a. D and E are the mid points of BC and CA . the work done in taking a charge q from Q from D to E is

   a) Zero

   b) $\frac{3qQ}{4\pi\epsilon_0 a}$

   c) $\frac{3qQ}{8\pi\epsilon_0 a}$

   d) $\frac{qQ}{4\pi\epsilon_0 a}$

4. The electric potential V at any point (x,y,z) all in metres in space Given by V = $4x^2$ volt. The electric field at the point (1,0,2) in vo metre, is

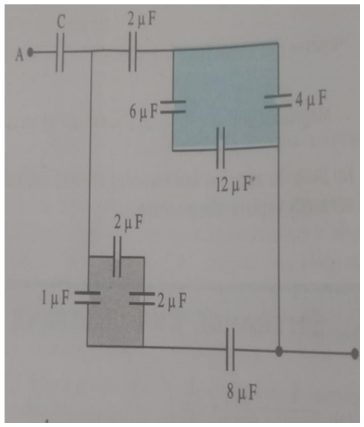
   a) 8 along negative x- axis

   b) 8 along positive x-axis

   c) 16 along negative x- axis

   d) 16 along positive x-axis

5. In the given network the value of c ,so that an equivalent capacita betweenA and b is $3\mu F$,is

   a) $\frac{1}{5}\,\mu F$

   b) $\frac{31}{5}\,\mu F$

   c) $48\,\mu F$

   d) $36\,\mu F$

6. Four point charges –Q, -q, 2q and placed one at each corner of th square . the relation between Q and q for which potential at the ce of square is zero is

   a) Q= - q b) Q= $-\frac{1}{q}$

   c) Q=q d) Q = $\frac{1}{q}$

7. An electric dipole of moment P is placed in an electric field of intensity ‘E’ the dipole acquires a position such that the axis of t dipole makes an angle θ with the direction of field. Assuming tha potential energy of the dipole to be zero when $\theta = 90^0$ the torque the potential energy of the dipole will respectively be

   a) pE sin θ, -pEcos θ

   b) pE sin θ, -2pEcos θ

   c) pE sin θ, 2pEcos θ

d) pE cos θ, -pEcos θ

8. A capacitor having capacity of $2\mu F$ is charged to 200v and then the plates of the capacitor are connected to a resstance wire. The heat produced in joule will be

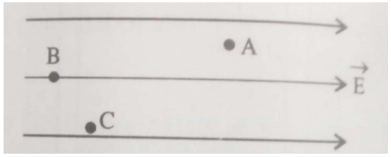
   a) 2×10^{-2} b) 4×10^{-2}

   c) 4×10^{4} d) 4×10^{10}

9. The electric field in a certain region is given by $\vec{E} = (5\hat{\imath} - 3\hat{\jmath})\frac{kV}{m}$. The potential difference VB-VA between point A and B Having co-ordinates(4,0,3)m and (10,3,0) m respectively , is equal to

   a) 21kV b) -12 kV c) 39 kV d) -39 kV

10. A,B and C are three points in a uniform electric field .The electric potential is



a) Maximum at C
b) Same at all the three points A,B and C
c) Maximum at A
d) Maximum at B