

## Topic :- UNITS AND MEASUREMENTS

- In an experiment, to measure the height of a bridge by dropping stone into water underneath, if the error in measurement of time is  $0.1s$  at the end of  $2s$ , then the error in estimation of height of bridge will be  
a)  $0.49 m$                       b)  $0.98 m$                       c)  $1.96 m$                       d)  $2.12 m$
- The dimension of  $k$  in the equation  $W = \frac{1}{2}kx^2$  is  
a)  $[ML^0T^{-2}]$                       b)  $[M^0LT^{-1}]$                       c)  $[MLT^{-2}]$                       d)  $[ML^0T^{-1}]$
- A body of mass  $m = 3.513 kg$  is moving along the  $x$  - axis with a speed of  $5.00 ms^{-1}$ . The magnitude of its momentum is recorded as  
a)  $17.6 kg ms^{-1}$                       b)  $17.565 kg ms^{-1}$                       c)  $17.56 kg ms^{-1}$                       d)  $17.57 kg ms^{-1}$
- The dimensional formula for the modulus of rigidity is  
a)  $ML^2T^{-2}$                       b)  $ML^{-1}T^{-3}$                       c)  $ML^{-2}T^{-2}$                       d)  $ML^{-1}T^{-2}$
- The unit of physical quantity obtained by the line intergral of electric field is  
a)  $NC^{-1}$                       b)  $Vm^{-1}$                       c)  $JC^{-1}$                       d)  $C^2N^{-1}m^{-2}$
- The dimensions of gravitational constant  $G$  and the moment of inertia are respectively  
a)  $[ML^3T^{-2}]; [ML^2T^0]$                       b)  $[M^{-1}L^3T^{-2}]; [ML^2T^0]$   
c)  $[M^{-1}L^3T^{-2}]; [M^{-1}L^2T]$                       d)  $[ML^3T^{-2}]; [M^{-1}L^2T]$
- Unit of stress is  
a)  $N/m$     b)  $N - m$     c)  $N/m^2$                       d)  $N - m^2$
- Crane is British unit of volume (one crane =  $170.4742$ ). convert crane into SI units.  
a)  $0.170474 m^3$                       b)  $17.0474m^3$                       c)  $0.00170474m^3$                       d)  $1704.74m^3$
- SI unit of intensity of wave is  
a)  $Jm^{-2}s^{-1}$                       b)  $Jm^{-1}s^{-2}$                       c)  $W m^{-2}$                       d)  $J m^{-2}$



19.  $R$ ,  $L$  and  $C$  represent the physical quantities resistance, inductance and capacitance respectively. Which one of the following combination has dimension of frequency?

a)  $\frac{1}{\sqrt{RC}}$

b)  $\frac{R}{L}$

c)  $\frac{1}{LC}$

d)  $\frac{C}{L}$

20. If the length of a rectangle  $l = 10.5$  cm, breadth  $b = 2.1$  cm and minimum possible measurement by scale = 0.1 cm, then the area is

a)  $22.0 \text{ cm}^2$

b)  $22.1 \text{ cm}^2$

c)  $22.05 \text{ cm}^2$

d)  $22 \text{ cm}^2$

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