

# PHYSICS

**CLASS-XI**

**NEET**

## MODULE-01

Units and measurements

Motion in a straight line | Motion in a plane | Laws of motion

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Physics Wallah

# NEET Past 10 Year Questions



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- A screw gauge has least count of 0.01 mm and there are 50 divisions in its circular scale.  
The pitch of the screw gauge is: (2020)  
a. 0.25 mm                      b. 0.5 mm  
c. 1.0 mm                        d. 0.01 mm
- Taking into account of the significant figures, what is the value of  $9.99 \text{ m} - 0.0099 \text{ m}$ ? (2020)  
a. 9.98 m                        b. 9.980 m  
c. 9.9 m                         d. 9.9801 m
- Dimensions of stress are : (2020)  
a.  $[\text{ML}^2\text{T}^{-2}]$                       b.  $[\text{ML}^0\text{T}^{-2}]$   
c.  $[\text{ML}^{-1}\text{T}^{-2}]$                       d.  $[\text{MLT}^{-2}]$
- The intervals measured by a clock given the following readings:  
1.25 s, 1.24 s, 1.27 s, 1.21 s and 1.28 s. What is the percentage relative error in the observations?  
(2020 Covid Re-NEET)  
a. 4%                                b. 16%  
c. 1.6%                              d. 2%
- The angle of  $1'$  (minute of arc) in radian is nearly equal to  
(2020 Covid Re-NEET)  
a.  $4.85 \times 10^{-4} \text{ rad}$                       b.  $4.80 \times 10^{-6} \text{ rad}$   
c.  $1.75 \times 10^{-2} \text{ rad}$                       d.  $2.91 \times 10^{-4} \text{ rad}$
- In an experiment, the percentage of error occurred in the measurement of physical quantities A, B, C and D are 1%, 2%, 3% and 4% respectively. Then the maximum percentage of error in the measurement of X, where  $X = \frac{A^2 B^{1/2}}{C^{1/3} D^3}$  will be (2019)  
a.  $\left(\frac{3}{13}\right)\%$                                       b. 16%  
c. -10%                                      d. 10%
- A student measured the diameter of a small steel ball using a screw gauge of least count 0.001 cm. The main scale reading is 5 mm and zero of circular scale division coincides with 25 divisions above the reference level. If screw gauge has a zero error of -0.004 cm, the correct diameter of the ball is (2018)  
a. 0.053 cm                        b. 0.525 cm  
c. 0.521 cm                        d. 0.529 cm
- A physical quantity of the dimensions of length that can be formed out of c, G and  $\frac{e^2}{4\pi\epsilon_0}$  is [c is velocity of light, G is universal constant of gravitation and e is charge]: (2017-Delhi)  
a.  $c^2 \left[ G \frac{e^2}{4\pi\epsilon_0} \right]^{1/2}$                       b.  $\frac{1}{c^2} \left[ \frac{e^2}{G 4\pi\epsilon_0} \right]^{1/2}$   
c.  $\frac{1}{c^2} G \frac{e^2}{4\pi\epsilon_0}$                       d.  $\frac{1}{c^2} \left[ G \frac{e^2}{4\pi\epsilon_0} \right]^{1/2}$
- A student performs an experiment of measuring the thickness of a slab with a vernier calliper whose 50 divisions of the main scale. He noted that zero of the vernier scale is between 7.00 cm and 7.05 cm mark of the main scale and 23<sup>rd</sup> division of the vernier scale exactly coincides with the main scale. The measured value of the thickness of the given slab using the calliper will be: (2017-Gujarat)  
a. 7.73 cm                              b. 7.23 cm  
c. 7.023 cm                              d. 7.073 cm
- Planck's constant (h), speed of light in vacuum (c) and Newton's gravitational constant (G) are three fundamental constants. Which of the following combinations of these has the dimension of length? (2016 - II)  
a.  $\sqrt{\frac{hc}{G}}$                                       b.  $\sqrt{\frac{Gc}{h^{3/2}}}$   
c.  $\frac{\sqrt{hG}}{c^{3/2}}$                                       d.  $\sqrt{\frac{hG}{c^{5/2}}}$
- If energy (E), velocity (V) and time (T) are chosen as the fundamental quantities, the dimensional formula of surface tension will be: (2015)  
a.  $[\text{EV}^{-1}\text{T}^{-2}]$                               b.  $[\text{EV}^{-2}\text{T}^{-2}]$   
c.  $[\text{E}^{-2}\text{V}^{-1}\text{T}^{-3}]$                               d.  $[\text{EV}^{-2}\text{T}^{-1}]$
- If dimension of critical velocity of liquid flowing through a tube are expressed as  $v_c \propto [\eta^x \rho^y r^z]$  where  $\eta$ ,  $\rho$  and  $r$  are the coefficient of viscosity of liquid, density of liquid and radius of the tube respectively, then the values of x, y and z are given by: (2015 - Re)  
a. 1, 1, 1                                      b. 1, -1, -1  
c. -1, -1, 1                                      d. -1, -1, -1
- If Force (F), Velocity (V) and Time (T) are taken as fundamental units, then the dimensions of mass are: (2014)  
a.  $[\text{F V T}^{-1}]$                                       b.  $[\text{F V T}^{-2}]$   
c.  $[\text{F V}^{-1} \text{T}^{-1}]$                                       d.  $[\text{F V}^{-1} \text{T}]$

- 14.** In an experiment four quantities a, b, c and d are measured with percentage error 1%, 2%, 3% and 4% respectively. Quantity P is calculated as follows  $P = \frac{a^3 b^2}{cd}$ . % error in P is: (2013)
- |        |        |
|--------|--------|
| a. 4%  | b. 14% |
| c. 10% | d. 7%  |
- 15.** The dimensions of  $(\mu_0 \epsilon_0)^{-1/2}$  are: (2012 Mains)
- |                         |                        |
|-------------------------|------------------------|
| a. $[L^{1/2} T^{-1/2}]$ | b. $[L^{-1} T]$        |
| c. $[LT^{-1}]$          | d. $[L^{1/2} T^{1/2}]$ |
- 16.** The damping force on an oscillator is directly proportional to the velocity. The units of the constant of proportionality are: (2012 Pre)
- |                       |                   |
|-----------------------|-------------------|
| a. $\text{kgms}^{-1}$ | b. $\text{kg/ms}$ |
| c. $\text{kgs}^{-1}$  | d. $\text{kgs}$   |
- 17.** The density of a material in CGS system of units is  $4 \text{ g/cm}^3$ . In a system of units in which unit of length is 10 cm and unit of mass is 100 g, the value of density of material will be: (2011 Mains)
- |        |         |
|--------|---------|
| a. 0.4 | b. 40   |
| c. 400 | d. 0.04 |
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# ABOUT PHYSICS WALLAH



Alakh Pandey is one of the most renowned faculty in NEET & JEE domain's Physics. On his YouTube channel, Physics Wallah, he teaches the Science courses of 11th and 12th standard to the students aiming to appear for the engineering and medical entrance exams.

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