

## Yakeen NEET 2.0 2026

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## Units and Measurements

DPP: 6

- Q1** In an experiment, refractive index of glass was observed to be 1.45, 1.56, 1.54, 1.44, 1.54 and 1.53. Calculate mean value of refractive index.  
(A) 1.51 (B) 2.45  
(C) 1.52 (D) 1.15
- Q2** If absolute error is 0.05 m for a measured length of 5m. What is the percentage error?  
(A) 1% (B) 2%  
(C) 3% (D) 4%
- Q3** 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?  
(A) 4% (B) 16%  
(C) 1.6% (D) 2%
- Q4** The distance between two points is measured as  $(1.25 \pm 0.05)$  m. What is the relative error in the measurement?  
(A) 0.02 (B) 0.04  
(C) 0.05 (D) 0.08
- Q5** A wire has a mass  $0.3 \pm 0.003$  g, radius  $0.5 \pm 0.005$  mm and length  $6 \pm 0.06$  cm. The maximum percentage error in the measurement of density is:  
(A) 1% (B) 2%  
(C) 3% (D) 4%
- Q6** The period of oscillation of a simple pendulum is given by  $T = 2\pi\sqrt{\frac{l}{g}}$  where  $l$  is about 100 cm and is known to have 1 mm accuracy. The period is about 2 s. The time of 100 oscillations is measured by a stop watch of least count 0.1 s. The percentage error in  $g$  is  
(A) 0.1% (B) 1%
- (C) 0.2% (D) 0.8%
- Q7** If  $x = a - b$ , the maximum percentage error in the measurement of  $x$  will be  
(A)  $\left(\frac{\Delta a}{a} + \frac{\Delta b}{b}\right) \times 100\%$   
(B)  $\left(\frac{\Delta a}{a} - \frac{\Delta b}{b}\right) \times 100\%$   
(C)  $\left(\frac{\Delta a}{a-b} + \frac{\Delta b}{a-b}\right) \times 100\%$   
(D)  $\left(\frac{\Delta a}{a-b} - \frac{\Delta b}{a-b}\right) \times 100\%$
- Q8** If  $x = ab$ , the maximum percentage error in the measurement of  $x$  will be:  
(A)  $\left(\frac{\Delta a}{a} \times 100\%\right) \times \left(\frac{\Delta b}{b} \times 100\%\right)$   
(B)  $\left(\frac{\Delta a}{a} \times 100\%\right) \div \left(\frac{\Delta b}{b} \times 100\%\right)$   
(C)  $\left(\frac{\Delta a}{a} - \frac{\Delta b}{b}\right) \times 100\%$   
(D)  $\left(\frac{\Delta a}{a} + \frac{\Delta b}{b}\right) \times 100\%$
- Q9** If  $x = a^2b$ , the maximum percentage error in the measurement of  $x$  will be  
(A)  $\left(\frac{2\Delta a}{a} \times 100\%\right) \times \left(\frac{\Delta b}{b} \times 100\%\right)$   
(B)  $\left(\frac{2\Delta a}{a} \times 100\%\right) \div \left(\frac{\Delta b}{b} \times 100\%\right)$   
(C)  $\left(\frac{2\Delta a}{a} - \frac{\Delta b}{b}\right) \times 100\%$   
(D)  $\left(\frac{2\Delta a}{a} + \frac{\Delta b}{b}\right) \times 100\%$
- Q10** If  $Z = \frac{A^4 B^{\frac{1}{3}}}{CD^{\frac{3}{2}}}$  and  $\Delta A, \Delta B, \Delta C$ , and  $\Delta D$  are their absolute errors in  $A, B, C$  and  $D$  respectively. The relative error in  $Z$  is  
(A)  $\frac{\Delta Z}{Z} = 4\frac{\Delta A}{A} + \frac{1}{3}\frac{\Delta B}{B} + \frac{\Delta C}{C} + \frac{3}{2}\frac{\Delta D}{D}$   
(B)  $\frac{\Delta Z}{Z} = 4\frac{\Delta A}{A} + \frac{1}{3}\frac{\Delta B}{B} - \frac{\Delta C}{C} - \frac{3}{2}\frac{\Delta D}{D}$   
(C)  $\frac{\Delta Z}{Z} = 4\frac{\Delta A}{A} + \frac{1}{3}\frac{\Delta B}{B} + \frac{\Delta C}{C} - \frac{3}{2}\frac{\Delta D}{D}$   
(D)  $\frac{\Delta Z}{Z} = 4\frac{\Delta A}{A} + \frac{1}{3}\frac{\Delta B}{B} - \frac{\Delta C}{C} + \frac{3}{2}\frac{\Delta D}{D}$



**Q11** The maximum error in the measurement of mass and length of the side of a cube are 2% and 1%, respectively. The maximum error in its density is  
(A) 2% (B) 1%  
(C) 3% (D) 5%

**Q12** The percentage errors in measurement of mass and speed are 3% and 2%, respectively. The error in kinetic energy will be  
(A) 6% (B) 7%  
(C) 10% (D) 12%

**Q13** Error in the measurement of radius of a sphere is 1%. The error in the calculated value of its volume is:  
(A) 1% (B) 3%  
(C) 5% (D) 7%

**Q14** The radius of a ball is  $(5.4 \pm 0.2)$  cm. The percentage error in the volume of the ball is  
(A) 11% (B) 4%  
(C) 7% (D) 9%

**Q15** 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

- (A) 7% (B) 4%  
(C) 14% (D) 10%



## Answer Key

Q1 (A)  
Q2 (A)  
Q3 (C)  
Q4 (B)  
Q5 (D)  
Q6 (C)  
Q7 (C)  
Q8 (D)

Q9 (D)  
Q10 (A)  
Q11 (D)  
Q12 (B)  
Q13 (B)  
Q14 (A)  
Q15 (C)



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