ARJUNA (NEET)

Units and Mesurements

DPP-06

1. If main scale division of screw gauge is 1 mm and there 100 division on circular scale, then least count of screw gauge is

(A) 0.1 mm (B) 0.01 mm

(C) 0.01 cm (D) 0.001 mm

2. If the time period of oscillation of a pendulum is measured as 2.5 second using a stop watch with least count $\frac{1}{2}$ sec, then the permissible error in the measurement is

(A) 10% (B) 30%

(C) 20% (D) 25%

3. The unit of percentage error is

(A) Same as that of physical quantity

(B) Different from that of physical quantity

(C) Percentage error is unitless

(D) Errors have got their own units which are different from that of physical quantity measured

4. 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%

5. There is an error of 2% in the measurement of side of a cube. The percentage error in the calculation of its volume will be

(A) 1%

(B) 2%

(C) 3%

(D) 6%

6. In the measurement of a physical quantity $X = \frac{A^2B}{C^{1/3}D^3}$. The percentage errors introduced in the measurements of the quantities, A, B, C and D are 2%, 2%, 4% and 5% respectively. Then the minimum amount of percentage of error in the measurement of X is contributed by

(A) A (B) B

(C) C (D) D

7. 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) $\left(\frac{\Delta a}{a-b}-\frac{\Delta b}{a-b}\right)\times 100\%$

8. 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) $\left(\frac{\Delta a}{a}+\frac{\Delta b}{b}\right)\times 100\%$

9. In an experiment refractive index of glass was observed to be 1.45, 1.56, 1.54, 1.44, 1.54 and 1.53. The mean absolute error in the experiment is

(A) 0.04 (B) 0.02

(C) – 0.03 (D) ± 0.01

10. 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) $\left(\frac{2\Delta a}{a}+\frac{\Delta b}{b}\right)\times 100\%$

ANSWERS

1. (B)
2. (C)
3. (C)
4. (B)
5. (D)
6. (C)
7. (C)
8. (D)
9. (A)
10. (D)

Note - If you have any query/issue

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