MCQ I

2.1 The number of significant figures in 0.06900 is

(a) 5
(b) 4
(c) 2
(d) 3

2.2 The sum of the numbers 436.32, 227.2 and 0.301 in appropriate significant figures is

(a) 663.821
(b) 664
(c) 663.8
(d) 663.82

2.3 The mass and volume of a body are 4.237 g and 2.5 cm^3, respectively. The density of the material of the body in correct significant figures is

(a) 1.6048 g cm^{-3}
(b) 1.69 g cm^{-3}
(c) 1.7 g cm^{-3}
(d) 1.695 g cm^{-3}

2.4 The numbers 2.745 and 2.735 on rounding off to 3 significant figures will give

(a) 2.75 and 2.74
(b) 2.74 and 2.73
(c) 2.75 and 2.73
(d) 2.74 and 2.74

2.5 The length and breadth of a rectangular sheet are 16.2 cm and 10.1cm, respectively. The area of the sheet in appropriate significant figures and error is

(a) 164 ± 3 cm^2
(b) 163.62 ± 2.6 cm^2
(c) 163.6 ± 2.6 cm^2
(d) 163.62 ± 3 cm^2

2.6 Which of the following pairs of physical quantities does not have same dimensional formula?

(a) Work and torque.
(b) Angular momentum and Planck's constant.
(c) Tension and surface tension.
(d) Impulse and linear momentum.

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2.7 Measure of two quantities along with the precision of respective measuring instrument is

$A = 2.5\ m\ s^{-1} \pm 0.5\ m\ s^{-1}$
$B = 0.10\ s \pm 0.01\ s$

The value of $A\,B$ will be

(a) (0.25 ± 0.08) m
(b) (0.25 ± 0.5) m
(c) (0.25 ± 0.05) m
(d) (0.25 ± 0.135) m

2.8 You measure two quantities as $A = 1.0\ m \pm 0.2\ m$, $B = 2.0\ m \pm 0.2\ m$. We should report correct value for $\sqrt{AB}$ as:

(a) $1.4\ m \pm 0.4\ m$
(b) $1.41m \pm 0.15\ m$
(c) $1.4m \pm 0.3\ m$
(d) $1.4m \pm 0.2\ m$

2.9 Which of the following measurements is most precise?

(a) 5.00 mm
(b) 5.00 cm
(c) 5.00 m
(d) 5.00 km.

2.10 The mean length of an object is 5 cm. Which of the following measurements is most accurate?

(a) 4.9 cm
(b) 4.805 cm
(c) 5.25 cm
(d) 5.4 cm

2.11 Young's modulus of steel is 1.9×10^{11} N/m^2. When expressed in CGS units of dynes/cm^2, it will be equal to (1N = 10^5 dyne, 1m^2 = 10^4 cm^2)

(a) 1.9×10^{10}
(b) 1.9×10^{11}
(c) 1.9×10^{12}
(d) 1.9×10^{13}

2.12 If momentum (P), area (A) and time (T) are taken to be fundamental quantities, then energy has the dimensional formula

(a) $(P^1 A^{-1} T^1)$
(b) $(P^2 A^1 T^1)$
(c) $(P^1 A^{-1/2} T^1)$
(d) $(P^1 A^{1/2} T^{-1})$

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