1.

A physical quantity X is expressed as

$v = \sqrt{\frac{X}{\text{Density}}}$

The dimensions of X are

1. $ML^{-1}T^{-2}$

2. MLT^{-2}

3. MLT^{-1}

4. $ML^{-1}T^{-3}$

2.

For $10^{(at+3)}$, the dimension of a is :

1. $M^0L^0T^0$

2. $M^0L^0T^1$

3. $M^0L^0T^{-1}$

4. None of these

3.

If force (F), velocity (v) and time (T) are taken as fundamental units, then the dimensions of mass are:

(a) $[FvT^{-1}]$

(b) $[FvT^{-2}]$

(c) $[Fv^{-1}T^{-1}]$

(d) $[Fv^{-1}T]$

4.

The Martians use force (F), acceleration (A) and time (T) as their fundamental physical quantities. The dimensions of length on Martians system are

(1) $[FT^2]$

(2) $[F^{-1}T^2]$

(3) $[F^{-1}A^2T^{-1}]$

(4) $[AT^2]$

5.

Which of the following quantities has the same dimensions as that of energy ?

(1) Power

(2) Force

(3) Momentum

(4) Work

6.

Position of a body with acceleration '*a*' is given by $x = Ka^m t^n$,here *t* is time. Find values of *m* and *n*.

1. *m* = 1, *n* = 1

2. *m* = 1, *n* = 2

3. *m* = 2, *n* = 1

4. *m* = 2, *n* = 2

7.

Unit of power is:

(1) *Kilowatt*

(2) *Kilowatt-hour*

(3) D*yne*

(4) *Joule*

8.

Taking into account the significant figures, what is the value of (9.99m - 0.0099m)?

1. 9.98 m

2. 9.980 m

3. 9.9 m

4. 9.9801 m

9.

Which of the following measurements is most precise?

1. 5.00 mm

2. 5.00 cm

3. 5.00 m

4. 5.00 km

10.

What is the number of significant figures in 0.310×10^3?

(1) 2

(2) 3

(3) 4

(4) 6

11.

One nanometre is equal to:

(1) $10^{9} mm$

(2) $10^{-6}\ cm$

(3) $10^{-7} cm$

(4) $10^{-9} cm$

12.

If 97.52 is divided by 2.54, the correct result in terms of significant figures is:

(1) 38.4

(2) 38.3937

(3) 38.394

(4) 38.39

13.

$The\ measurement\ are\ made\ as\ 18.425\ cm,$
$7.21\ cm\ and\ 5.0\ cm.\ The\ addition$
$should\ be\ written\ as$:
$(a)\ 30.635\ cm$
$(b)\ 30.64\ cm$
$(c)\ 30.63\ cm$
$(d)\ 30.6\ cm$

14.

Choose any one of the following four responses :

(1) If both assertion and reason are true and the reason is the correct explanation of the assertion.

(2) If both assertion and reason are true but reason is not the correct explanation of the assertion.

(3) If assertion is true but reason is false.

(4) If the assertion and reason both are false.

Assertion: Dimensional constants are the quantities whose values are constant.

Reason : Dimensional constants are dimensionless.

15.

The decimal equivalent of 1/20 up to three significant figures is:

(1) 0.0500

(2) 0.05000

(3) 0.0050

(4) 5.0×10^{-2}

16.

The number of significant figures in all the given numbers 25.12, 2009, 4.156 and 1.217×10^{-4} is:

1. 1

2. 2

3. 3

4. 4

17.

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

18.

The length, breadth, and thickness of a block are given by l = 12 cm, b = 6 cm and t = 2.45 cm The volume of the block according to the idea of significant figures should be:

(1) 1×10^{2} cm^{3}

(2) 2×10^{2} cm^{3}

(3) 1.764×10^{2} cm^{3}

(4) None of these

19.

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

20.

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}

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