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Unit & Measurement

1. If P is force t is time, then find the dimension of A

- (a) $[MLT^{-1}][MLT^{-4}]$ (b) $[LT^{-1}][T^{-1}]$
(c) $[MLT^{-2}][M^2LT^{-2}]$ (d) $[T][T^{-2}]$

2. Find the dimension of 'a' in the Vander wall equation $(P + \frac{a}{v^2})(v - b) = RT$.

- (a) $[L^3]$ (b) $[ML^5T^{-2}]$
(c) $[M^0L^5T^{-1}]$ (d) $[MLT^{-2}]$

3. If $s = at + bt^2 + ct^3$'s' denotes distance and time 't' then find dimension of a, b and c.

- (a) $LT^{-1}, LT^{-2}, LT^{-4}$
(b) LT^{-2}, LT^{-3} and LT^{-4}
(c) LT^{-1}, LT^{-2} and LT^{-3}
(d) None

4. The velocity of body falling under gravity is given $g^p h^q$ where 'h' is the distance covered by body find the value of p and q

- (a) 1, 1/2 (b) 1/2, 1/2 (c) 1/2, 1 (d) 1, 1

5. If unit of mass, length and time is made half, then the unit of pressure

- (a) One-fourth (b) Halved (c) Double (d) Fourtime

6. Among these, equation of motion which is dimensionally correct

- (a) $V^2 = U^2 - at$ (b) $V^2 = U^2 + 2as$
(c) $V^2 = u^2 - 2ast$ (d) $V = u + as$

7. In C.G.S system the magnitude of the force is 100 dynes. In another system where the fundamental physical quantities are kilogram, meter and minute. The magnitude of force is

- (a) 0.036 (b) 0.36 (c) 3.6 (d) 36

8. A thickness of paper is 0.0015 cm, find no. of significant figure-

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

9. The order of magnitude of 0.00005

- (a) 10^4 (b) 10^5 (c) 10^{-5} (d) 10^{-4}

10. In measurement of Cube, percentage error (maximum) of its length and mass in 2% and 3% respectively, then find maximum percentage error of volume.

- (a) 3% (b) 27% (c) 9% (d) 6%

11. In C.G.S system, the density of body is 8gm/cm^3 . Find its density in S.I unit.

- (a) $4 \times \frac{10^5 \text{kg}}{\text{m}^3}$ (b) $6 \times 10^8 \text{kgm}^3$
(c) $8 \times 10^3 \text{kg/m}^3$ (d) $2 \times 10^3 \text{kg/m}^3$

12. Percentage error of any substances 'A' will be equal to

- (a) $\frac{A}{\Delta A} \times 100$ (b) $\frac{\Delta A}{A} \times 100$ (c) $\frac{A}{100\Delta A}$ (d) $A\Delta A$

13. In given numbers find the significant no. 0.0034, 1.00204, 12300.

- (a) 2, 4, 6 (b) 2, 6, 3 (c) 2, 6, 2 (d) 1, 6, 2

14. In the given equation $0.0024 + 0.3036 =$ find the result in significant figure

- (a) 0.306 (b) 0.30600 (c) 0.3060
(d) 0.306000

15. Find the order of magnitude of given no:- 2306, 0.0506, 0.0002

- (a) 3, -1, -4 (b) 3, -2, -4
(c) 4, -1, -4 (d) 3, -1, 2

16. Which of the followings not a derived physical quantity?

- (a) speed (b) volume (c) force (d) mass

17. Which of the following is not a fundamental physical quantity?

- (a) Mass (b) Length (c) temperature (d) density

18. Light year is the unit of

- (a) time (b) speed (c) distance (d) None

19. Astronomical unit (AU) is the average distance between

- (a) the earth and the moon
(b) the earth and the sun
(c) the moon and the sun
(d) the earth and the jupiter

20. The order of magnitude of number 11 is

- (a) 10^0 (b) 10^1 (c) 10^{-2} (d) 10^{-1}

21. Which of the following is not the unit of length?

- (a) angstrom (b) Fermi (c) light year (d) barn

22. 1 a.m.u. =

- (a) $1.66 \times 10^{-24} \text{Kg}$

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(b) $1.66 \times 10^{-27} \text{Kg}$

(c) $1.66 \times 10^{-25} \text{Kg}$

(d) $1.66 \times 10^{-30} \text{kg}$

23.1 nanometer =.....

(a) 10^{-9}cm (b) 10^{-9}mm (c) 10^{-9}m (d) 10^{-9}km

24. Kgms^{-2} is not the unit of

(a) weight (b) tension (c) centrifugal force (d) work

25.1 Angstrom is equal to

(a) 10^{-10}mm (b) 10^{-10}cm (c) 10^{-10}m (d) 10^{-10}Km

26.1 fermi is equal to

(a) 10^{-15}mm (b) 10^{-15}cm (c) 10^{-14}m (d) 10^{-15}m

27.1 AU is equal to

(a) $1.5 \times 10^{11} \text{cm}$ (b) $1.5 \times 10^{11} \text{m}$

(c) $1.5 \times 10^{11} \text{Km}$ (d) $9.46 \times 10^{15} \text{m}$

28.1 Light year is equal to

(a) $9.46 \times 10^{15} \text{m}$ (b) $9.46 \times 10^{14} \text{m}$

(c) $9.46 \times 10^{13} \text{m}$ (d) $9.46 \times 10^3 \text{m}$

29. which of the following are not a unit of time?

(a) second (b) parsec (c) year (d) None

30. The number of 0.004 has significant figures equal to

(a) 1 (b) 2 (c) 3 (d) 4

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