Units, Dimension and Measurement

1. Common SI Prefixes and Symbols for Multiples

Factor	Prefix	Symbol

2. Common SI Prefixes and Symbols for Submultiples

Factor	Prefix	Symbol

3. Some Important Constants

Name	Symbol	Value
Speed of Light in Vacuum		
Charge of Electron		
Gravitational Constant		
Planck Constant		
Boltzmann Constant		
Avogadro Number		
Universal Gas Constant		
Mass of Electron		
Mass of Neutron		

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	Mass of Proton		
	Rydberg Constant		
	Stefan-Boltzmann Constant		
	Wien's Constant		
	Permittivity of Free Space		
	Permeability of Free Space		
	Mechanical Equivalent of Heat		
	Standard Atmospheric Pressure		
	Absolute Zero		
	Electron Volt		
	Atomic Mass Unit		
	Electron Rest Energy		
	Energy Equivalent of 1 Unit		
	Volume Of Ideal Gas at (0^0 C and 1 atm)		
	Acceleration due to Gravity (Sea Level or at the Equator)		

4.

Fundamental Quantity	SI Unit	SI Unit symbol

5. Define: 1 radian

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6.	Define: 1 steradian
7.	1^0 = ‘
8.	1’ = ‘’
9.	1 m^3 = litre
10.	1 litre = cc
11.	1fermi = m
12.	$1A^0$ = m
13.	1 AU = m; it is the distance between and
14.	1 LY = m
15.	1 Parsec = light year
16.	1 inch = cm
17.	1Foot = inches
18.	1 X-ray unit = m
19.	1 C S U = times mass of sun = kg
20.	1 Metric Tonne = kg
21.	1 Quintal = kg
22.	1 a m u = kg
23.	1 atm = cm of hg = N/m^2
24.	1 barn = m^2
25.	1 shake = sec
26.	1 mile = km
27.	1 atm = Pa
28.	1 bar = Pa
29.	1 torr = mm of Hg
30.	1 m^3 = cm^3 = cc = ltr

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31.	1 slug = kg
32.	1 ton = kg
33.	1 metric ton = kg
34.	1 nautical mile = m
35.	1 knot = km / hr
36.	1 yard = ft
37.	1 Hectare = m^2 = acre
38.	Dimensional Formulae of Physical Quantities

S.No.	Physical Quantity	Dimensional Formula
1	Area	
2	volume	
3	Mass Density	
4	Frequency, Resonant frequency	
5	Velocity, speed, Critical Velocity, escape velocity	
6	Acceleration, centripetal acceleration	
7	force	
8	impulse	
9	Work, energy, heat energy, internal energy, kinetic energy, potential energy, Rotational Kinetic energy	
10	power	
11	Momentum	

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12	Pressure, stress, radiation pressure	
13	strain	
14	Modules of elasticity	
15	surface tension	
16	surface energy	
17	velocity gradient	
18	pressure gradient	
19	pressure energy	
20	coefficient of viscosity	
21	Angle, Angular displacement	
22	trigonometric ratio (sin θ, cos θ .tan θ etc)	
23	angular velocity	
24	angular acceleration	
25	Radius of gyration	
26	moment of inertia	
27	angular momentum	
28	moment of force, moment of couple	
29	torque	
30	Angular frequency	
31	Wave Length	

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32	Intensity of wave	
33	Energy Density	
34	Efficiency	
35	Angular Impulse	
36	Gravitational Constant	
37	Planck Constant	
38	Heat capacity, Entropy	
39	Specific heat capacity	
40	Latent heat	
41	Coefficient of thermal expansion	
42	Bulk modulus	
43	compressibility	
44	Stefan Constant	
45	Wien constant	
46	Boltzmann constant	
47	Universal gas constant	
48	Charge	
49	Wave Number	
50	Electric Resistance	

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39	Fundamental Forces of the Universe
40	Round off up to one decimal place
	6.32 7.86 4.750 4.650 15.352 9.853
41	How many significant Figures are in the following numbers? 3456 0.040860 3.50001 2000 7 Oranges
42	Determine the Order of magnitude of the following values: 49 51 0.049 0.050 0.051

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43	Propagation of a combination of errors (a) Maximum Error in Summation and Difference $z = a \pm b$ (b) Maximum Fractional Error in Product and Division $z = ab$ or $z = \frac{a}{b}$ (c) Maximum Fractional Error in Power of a Quantity $z = \frac{a^m}{b^n}$