

Answer the following questions :

- 1) What do you mean by vector quantities ? Give any three examples.
- 2) What are called derived quantities ? Give any three examples of derived quantities.
- 3) Classify the following quantities into fundamental or derived quantities.
Mass, Speed, Momentum, Distance, Time, Weight, Density
- 4) Derive the SI units of the quantities.

$$\text{Ex : Power} = \frac{\text{Energy}}{\text{Time}}$$

SI unit of Energy = Joule;

SI unit of Time = Second.

$$\text{SI unit of power} = \frac{\text{Joule}}{\text{Second}} = \text{Watt}$$

- 1) Pressure =
 - 2) Electric current =
 - 3) Acceleration =
 - 4) Velocity =
 - 5) Work =
 - 6) Momentum =
 - 7) Force =
 - 8) Kinetic Energy =
 - 9) Resistivity =
 - 10) Resistance =
- 5) Classify the following into vectors, scalars, tensor.

Pressure, Temperature, Electric Current, Charge, Work, Energy, Acceleration, Force, Mass, Time, Velocity, Momentum.

HOLIDAY HOME WORK

CLASS : IX

SUBJECT : PHYSICS

- 1) A physical quantity (Q) can be expressed as _____.
a) NU b) $N + U$ c) $\frac{N}{U}$ d) $\frac{U}{N}$
- 2) Number of fundamental quantities considered in MKS are _____.
a) 9 b) 6 c) 7 d) 3
- 3) Which of the following is neither vector nor a scalar _____.
a) Force b) Pressure c) Velocity d) Distance
- 4) The SI unit of momentum is _____.
a) Kg m/s^2 b) kg m/s c) kg ms d) kgms^2
- 5) Number of fundamental quantities considered in SI system are _____.
a) 9 b) 6 c) 7 d) 3
- 6) Find the odd one out.
a) Acceleration b) Mass c) Force d) Velocity
- 7) 1 Kilo is _____.
a) 10^2 b) 10^3 c) 10^{-3} d) 10^{-2}
- 8) The SI unit of acceleration due to gravity _____.
a) m/s b) m/s^2 c) Newton d) dyne
- 9) Which of the following is not a fundamental unit ?
a) Kg b) S c) N d) Cd
- 10) SI unit of temperature is expressed as _____.
a) K b) $^{\circ}\text{C}$ c) $^{\circ}\text{K}$ d) C
- 11) Find the odd one out :
a) Length b) Temperature c) Speed d) Mass
- 12) a) $1 \text{ mm} = \text{_____ m.}$
b) $1 \text{ micro metre } (1 \mu\text{m}) = \text{_____ m.}$

- 10) The CGS unit of force is _____ and it is related to its SI unit as _____.
- 11) The ratio of CGS unit of pressure to its SI unit is _____.

PREFIXES

Prefix of multiplication factor is used for a very large or small value of quantity so that it could be written briefly and easily understood.

Prefix(symbol)	Multiplication Factor	Numerical Value	Examples
tera (T)	10^{12}	1 000 000 000 000	2 TN (teranewton)
giga (G)	10^9	1 000 000 000	5 Gm (gigameter)
mega (M)	10^6	1 000 000	13 MW (megawatt)
kilo (k) ↑	10^3	1 000	18 kg (kilogram)
centi (c) ↓	10^{-2}	0.01	55 cm (centimeter)
mili (m)	10^{-3}	0.001	24 mm (millimeter)
micro (μ)	10^{-6}	0.000 001	89 μ m (micrometer)
nano (n)	10^{-9}	0.000 000 001	17 nm (nanometer)
pico (p)	10^{-12}	0.000 000 000 001	21 pm (picometer)

Convert the figures given below

- 1) 6 km = _____ m.
- 2) 54 MN = _____ N.
- 3) 1 km / h = _____ m/s.
- 4) 1 mm³ = _____ m³.

5) 1 cm² = _____ m².

6) 1 μ A = _____ A.

7) 1 mm = _____ km.

8) 45 MW = _____

9) 800 kHz _____ Hz

10) 1 nc = _____ c.

SI Units

Quantity	SI Unit	Symbol
Mass		Kg
Length	Metre	
Time		
Area	Square metre	
Volume		
Force		
Pressure	Pascal	
Energy		
Work		
Mechanical Power		
Frequency		
Potential Difference	Volt	
Current	Ampere	
Resistance		
Charge		
Resistivity		
Temperature		