

Gaining Apex Coaching Centre

(Where Toppers make..... Toppers)

Compiled by: Dapinderjeet Singh

Assignments-I (10+1 PHYSICS)

Time: 1 Hrs

CHAPTER 4 - DIMENSIONS(UNIT-I)

Section-A

- 1) Write the dimensional formula of the following
 - a) Force
 - b) Power
 - c) Surface Tension
 - d) Tension
 - e) Acceleration
 - f) Linear Momentum
 - d) Planks Constant
 - e) Energy
 - f) Work
 - g) velocity
 - h) Frequency
 - i) Gravitational Constant

Section-B

- 1) Find the value of a force of 100N on a system based upon the metre, the kilogram and the minute as a fundamental units
- 2) Check the accuracy of relation $v = \frac{1}{2l} \sqrt{\frac{T}{m}}$, where v is frequency, l is length, T is tension and m is mass of unit length of string
- 3) In the Vander Wall's equation $\left(P + \frac{a}{v^2}\right)(v - b) = RT$ what are the dimensions of a and b? Here p is pressure, v is volume T is temperature and R is gas constant.
- 4) Convert 10 Joules into ergs
- 5) The escape velocity from the surface of earth is given by $V = (2GM/R)^{1/2}$, where M is mass, G is gravitational constant and R is radius. Check the correctness of formula
- 6) Convert velocity of 72 Km/hr into m/s
- 7) Write the dimensions of a x b in the relation $E = \frac{b - x^2}{at}$, where E is the energy x is distance and T is time
- 8) The velocity of sound in air is 332 m/s. If the unit of length is Km and unit of time is hour, what would be the value of velocity?
- 9) A body has an acceleration of 10 km/hr². Find its value in cgs system
- 10) The wavelength of matter waves may depends upon planks constant (h), mass (m) and velocity (v) of the particle. Use method of dimensions to derive the formula dimensionally
- 11) Use method off dimensions derive an expression for rate of flow (V) of liquid through the pipe of radius (r) under a pressure gradient (P/l). Given that V also depends upon viscosity of liquid.

Gaining Apex Coaching Centre

(Where Toppers make..... Toppers)

Compiled by: Dapinderjeet Singh

- 12) A body has an acceleration of 10 km/hr^2 . Find its value in cgs system
- 13) Convert a power of megawatt into the cgs unit
- 14) What is the difference between 1AU and 1A^0

