

Holiday Homework(2024-2025)

Name: _____

Date: _____ / _05_____ / _2024

Class: XI-A1, A2

Subject: Physics

class-XI (Physics)

Instruction-

- 1.Learn chapters that have been done in class for unit test1.**
- 2.Creat a flow chart of at least 40 physical quantity including their dimension formula, unit and symbol in your notebook using your creativity.**
- 3.Make a collage /picture on a cartridge sheet of latest scientific research using your creativity and innovation.**
- 4)complete the assignment and M.C.Q. in the assignment notebook.**

ASSIGNMENT: Unit 1

GENERAL INSTRUCTIONS:

A: The numerical are based on application of theory content. Attempt them in your physics notebook as practice assignment.

B: Do all questions in sequence.

1)Density of air is 1.293 kg/m^3 .Express this value in cgs unit

2) What are the advantages of SI system of units?

3) Show that (i) momentum & impulse (ii) pressure & stress (iii) Angular velocity and frequency (iv)angular momentum & Planck's constant (v) work & Energy have same dimensions
6 Define some units for large and small lengths

4 Calculate the angle of (i) 1° (ii) $1'$ (iii) $1''$ in radians.

5Classify the physical quantities on the basis of dimensions. Are all constants dimensionless?Comment.

6. The frequency of an oscillating drop may depend on the radius, density and the surface tension of the liquid. Deduce the formula dimensionally.

7. The time period of a simple pendulum depends on the length of the pendulum and the acceleration due to gravity. Obtain the expression for the time period dimensionally.

8. The velocity of the water waves depends on the wavelength, density of the water and the acceleration of the water due to gravity. Deduce by the method of dimensions the relationship between these quantities.

9. A large star oscillates and the time period depends on the radius of the star, the density of the fluid and the gravitational constant G . Obtain the expression for the time period dimensionally.

10. Check the correctness of the relation

a). $\lambda = h/mv$

b). $T = 2\pi l/g$

c). $F = mv/r$

11. Name the fundamental physical quantity whose SI unit has not changed since the inspection of International system of units.

12. Write the dimensional formulae of (i) power (ii) surface tension.

13. Can a quantity have units but still be dimensionless? Give examples.

14. Can a quantity have dimensions but still have no units? Give examples.

15. Write 2 e.g. of non-dimensional variables.

16. Give the number of significant figures in (i) 0.270m (ii) 0.0027kg (iii) 27.00

(iv) 0.27×10^{-5} .