SUMMER VACCATION HOME WORK: 2025-26

CLASS-XI
SUBJECT-PHYSICS

Answer these questions.

1. Explain the need of measurement in physics.
2. Distinguish between Fundamental and derived units.
3. Define unit. Write the main characteristics of unit.
4. Write the advantages of SI unit over other systems of unit.
5. What are coherent systems of unit?
6. Define light year, parsec and astronomical unit.
7. What do you mean by parallax and parallactic angle?
8. How can you find the distance of moon by parallax method?
9. Describe a method to measure the height of an inaccessible object like a mountain?
10. Describe the method to measure the diameter of moon?
11. What do you mean by dimensions?
12. Write dimensional formula of 25 physical quantities?
13. Convert Newton into dyne and joule into erg using dimensions?
14. Find expression for time-period of a simple pendulum?
15. What is principle of homogeneity?
16. Show the correctness of formula $F=mv^2/r$ dimensionally?
17. Write the characteristics of SI system of unit.
18. Define significant figures. Write its importance.
19. Mention the physical quantities having units but no dimensions.
20. Mention some of limitations of dimensions.
21. Prove equations of motion both graphically and mathematically.
22. State and prove 'Parallelogram law of addition of vectors.
23. Prove that addition of vectors is (i) Commutative (ii) Associative
24. Define scalar product of vectors. Mention some of its properties.
25. Define vector product of vectors. Mention its properties.
26. Find an expression for centripetal force acting on a body moving on a circular path with constant speed.
27. Find expressions for time of flight, maximum height and range of a projectile.

<u>Numerical of following NCERT Exercises</u>

- 2.1,2.2,2.3,2.5,2.13,2.20,2.26
- 3.1,3.3,3.4,3.5,3.6,3.7,3.8,3.9,3.10,3.14,3.16,3.18,3.23
- 4.8,4.9,4.10,4.11,4.13,4.15,4.25

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SUMMER VACCATION HOME WORK: 2025-26

CLASS-XII
SUBJECT-PHYSICS

Answer these questions.

1. State Coulomb's law of electrostatics. Express the same in SI units.
2. Define permittivity and dielectric constant.
3. Define electric field. Write its unit.
4. Write the properties of electric lines of force.
5. Define electric dipole moment of an electric dipole.
6. Define electric flux. Write its unit.
7. State Gauss's theorem of electrostatics.
8. Using this law find expressions for electric field:
   a. Due to uniformly charged plane sheet.
   b. Due to an infinitely long charge wire
   c. Due to a uniformly charged thin spherical shell
9. Define electric potential. Write its unit.
10. Define equipotential surface. Mention some of its characteristics.
11. Find an expression for electric potential due to a point charge.
12. Derive a relation between current and drift velocity.
13. State and explain Kirchhoff's laws.
14. Derive an expression for resistivity of a material.
15. Define temperature coefficient. Write its unit.
16. Define internal résistance of a cell.
17. Write the factors on which internal resistance of a cell depend.
18. Define electrical power. Write its unit.
19. **Numerical of following NCERT Exercises :-**

    1.1, 1.2, 1.6, 1.8, 1.9, 1.10, 1.16, 1.17, 1.18, 1.19, 1.20, 1.21, 1.22, 1.23, 1.24, 1.25, 1.26
    2.1, 2.2, 2.3, 2.5, 2.6, 2.7, 2.8, 2.9, 2.10, 2.11, 9.1,9.2,9.3,9.4,9.5,9.6,9.7
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Jiksha Singh