WORKSHEET FOR II TERM 2013 -2014

CLASS:XI **SUBJECT : Physics**

Units and Measurement

1. Check the correctness of the equation
   a) $S= ut + ½ at^2$
   b) $F = mv^2/r$
   c) $V= u +at$
2. The centripetal force acting on a body is found to be depending on mass, velocity and radius of the circular path. Derive a relation for centripetal force using method of dimensions.
3. Convert 1 Newton into dynes.
4. Define a) accuracy b) precision
5. Write the seven fundamental quantities and write their S I units.
6. Explain systematic errors
7. State the rule for the error of a product or quotient
8. Write the dimensional formula of force
9. The quantity P is given as $P= a^2 b / \sqrt{c}\, d^3$.
   The percentage errors in the measurements of a ,b, c and d are 1%, 2%, 3% and 2% respectively. Find the percentage error in P.
10. What are random errors?

Motion in a straight Line and Motion and Motion in a Plane

1. Define free fall.
2. Define projectile motion
3. Show that path followed by a projectile is parabolic
4. Derive an expression for maximum height, Time of flight and Horizontal range of a projectile .

5. Derive an expression for the magnitude and direction of the resultant of two vectors using parallelogram law of vector addition.
6. Draw position time graphs for a) body at rest b) positive velocity c) negative acceleration d) positive acceleration.
7. Derive equations of motion using graphical method
8. What is a vector quantity? Give examples.
9. Define null vector.
10. Draw position time graph to show two bodies travelling with different velocities in the same directions.

Properties of Bulk Matter

1. Draw stress strain graph and explain the terms yield strength, fracture point and Ultimate tensile strength.
2. Define young's modulus, bulk modulus and sheer modulus.
3. Show that speed of a efflux is same as speed of freely falling body.
4. Explain the working of hydraulic lift.
5. Define thermal expansion. Explain the different types of it.
6. State and prove Bernoulli's theorem. Mention two applications
7. Derive an expression for terminal velocity of body moving in viscous medium
8. What are elastomers?
9. Explain anomalous expansion of water.
10. Define Stock's law.