Homework
Class O-I
Subject: Physics

Q 1. Define vector quantities and scalar quantities.

Q 2. Separate vector quantities from the following.

Force, Mass, Weight, Time, Temperature, Velocity, Speed, Moment of a force, Pressure, Area, Volume.

Q 3. How do we represent a vector with its magnitude and direction?

Show a force vector 25N making an angle 45° with X-axis.

Q 4. How can we add two vectors using graphical method? Determine

The resultant force F of two forces F1=20N along x-axis and F2=15N along y-axis.

Q 5. Add two forces each 20N having an angle 60° between them using law of parallelogram of vector addition using graphical method. You must indicate the magnitude and direction of resultant force. Hint assume one force along horizontal direction.

Q 6. List the SI units of the following.

Area, Volume, Velocity, Acceleration, Force, Energy.

Q 7. List any two applications of velocity time graph.

Q 8. What do you understand by the term gradient or slope? List its formula.

Q 9. Define free fall acceleration. List value of g at sea level.

Q 10. Define up-thrust on a body falling freely in the air.

Q 11. Define terminal velocity and give one practical example of terminal velocity.

Q 12. Draw a velocity time graph of a paratrooper.

Q 13. How does the velocity of a paratrooper change in the air?

Q 14. State first condition of equilibrium.

Q 15. Give any two examples of equilibrium.

Q 16. Define moment of a force. List its formula.

Q 17. Determine the moment of a 50N force on a spanner of length 0.5m.

Q 18. State 2nd condition of equilibrium. List its formula.

Q 19. Define centre of gravity.

Q 20. What role does the centre of gravity play in the stability of a body?

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