Chapter-8

# MOTION

## Sub-Topic Name:

- Motion
- Distance and Displacement
- Speed and Velocity
- Acceleration
- Graphical Representation of Motion
- Three Equations of Motion
- Derivation of Three Equations of Motion

1. What is meant by a body at rest?
2. What do you mean by a negative displacement?
3. Define average speed?
4. Define acceleration of a body?
5. Define circular motion?
6. Distinguish between distance and displacement?
7. A body can have zero average velocity but not zero average speed. Explain.
8. Draw a distance-time graph for an object at rest.
9. Draw velocity-time graph for an object moving with uniform velocity.
10. A bus decreases its speed from 80 km/hr to 50 km/hr in 4sec. find the acceleration of thebus.
11. A train starting from a railway station and moving with a uniform acceleration attains a speed of 40 km/hr in 10 min. Find its acceleration.
12. A motor boat starting from rest on a lake accelerates in a straight line at a constant rate of 3.0 m/s for 8.0 s. How far does the boat travel during this

time ?

13. Draw velocity-time graph for an uniformly accelerated object. Using velocity-time graph, Derive $S = ut + 1/2\ at^2$.
14. Draw velocity-time graph for an uniformly accelerated object. Using velocity-time graph, Derive $v^2 - u^2 = 2as$.
15. A driver of a car travelling at 52 km/h applies the brakes and accelerates uniformly in the opposite direction. The car stops in 5 sec. Another driver going at 3 km/h in another car applies his breaks slowly and stops in 10sec. On the same graph paper plot the speed versustime graphs for the two cars. Which of the two cars travelled farther after the brakes were applied?