MOTION IN A STRAIGHT LINE

***General Instructions*:** Answer all the questions. If you are unable to answer any question, go through the page number that is given against that particular question in the text book. You can find the answer.

Test Paper-II

MAX MARKS: 20 **TIME: 60Mts**

1	A ball is thrown vertically upwards with a velocity of $20ms^{-1}$from the top of a multistory building. The height of the point from where the ball is thrown is 25.0m from the ground. (a) How high will the ball rise? And (b) how long will it be before the ball hits the ground? Take g= $10ms^{-2}$.	P48	3
2	Discuss the motion of an object under free fall. Neglect air resistance.	P49	2
3	Plot the graphs of the following for a body under free fall. a. Variation of acceleration with time. b. Velocity and with time. c. Distance with time	P49	3
4	Show that "The distances traversed, during equal intervals of time, by a body falling from rest, stand to one another in the same ratio as the odd numbers beginning with unity (namely, 1:3:5:7 :……..). Or State and prove Galileo's law of odd numbers for the distances covered by an object during equal intervals of time.	P50	3
5	Plot the position-time graph of the following. a. Two objects moving with equal velocities b. Two objects with unequal velocities, showing the time of meeting. c. Two objects with velocities in opposite directions, showing the time of meeting.	P52	3
6	Two parallel rail tracks run north-south. Train A move north with speed of $54kmh^{-1}$ and train B moves with a speed of 90 km h^{-1}. What is the a. Velocity of B with respect to A?	P52	3

b. Velocity of ground with respect to B? and

c. Velocity of a monkey running on the roof of the train A against its motion (with a velocity of 18 km $h^{-1}$with respect to the train A) as observed by a man standing on the ground?

7 Give the dimensional formula and SI unit of measurement of the following quantities. P54 3

a. Instantaneous acceleration

b. Average velocity

c. Displacement