REVISION WORKSHEET FOR SA1 (SESSION 2013-14)

CLASS – IX **SUBJECT- PHYSICS**

1- The school of a boy from his home is 1 km to the east. When he reaches back home, he says that he had traveled 2 km distance but his displacement is zero. Justify your answer.

2- Under what condition, the average speed is equal to the magnitude of the average velocity.

3- An object P is moving with a constant velocity for 5 mins. Another object Q is moving with changing velocity for 5 mins. Out of these two objects, which one has acceleration? Explain.

4- An electric train is moving with a velocity of 120km/hr. how much distance will it cover in30 sec?

5- A car is moving with a uniform velocity of 10m/s. the driver of the car decides to overtake the bus moving ahead of the car. So the driver of the car accelerates at 1m/s2 for 10 sec. Find the velocity of the car at the end of 10 sec. also find the distance traveled by the car while accelerating.

6- Give reasons:
(a) A passenger in a bus tends to fall backward when it starts suddenly.
(b) A bullet fired against a glass window pane makes a hole in it without cracking it.
(c) An athlete runs a certain distance before taking a long jump.

7- Explain with reasons:
a. When a shot is fired from a gun the gun recoils.
b. A jet aeroplane releases a lot of hot gases before taking off.
c. We press the ground while walking forward.
d. A rubber ball rebounds when struck against a hard floor.

8- What happens to the force of attraction between two objects when
(i) Their mass are halved?
(ii) Distance between them is increased to 4 times its previous value.
(iii) Distance between them as well as each of the mass is increase to 4 times.

9- If the distance between two bodies is increased 4 times by what factor should the mass of the bodies be altered so that the gravitational force between them remains the same?

10- What is the force between two spheres weighing 20 kg each and placed 50 cm apart?

11- A sphere of mass 40 kg is attracted by another sphere of mass 15 kg when their centres are 0.2m apart with force of 9.8×10^{-7} N. Calculate value of 'G'.

12- A body weighs 1 kg on the surface of the moon. If mass of the moon is 7.4×10^{22} kg and radius of moon is1740 km. Calculate:
a. The force acting between the body & the moon.
b. Acceleration produced in the body
c. Acceleration produced in moon.

13- A ball is thrown vertically upwards with a velocity of 49 m/s. Calculate:
(i) the max height to which it rises.
(ii) total time it takes to return to surface of the earth.

14- A stone is released from the top of a tower of height 19.6 m. Calculate the final velocity of a body just before touching the ground.

15- Differentiate between 'g' and 'G'.

16- Name the factors on which 'g' depend.

17- Give a few examples / applications of the universal law of gravitation.

18- On what factor (s) does the gravity of a planet depend?

19- A stone is thrown vertically upwards with an initial velocity of 40m/s. Find the max height reached by the stone. What is the net displacement and the total distance covered by the stone? [$g = 10m/s^2$]

20- The object dropped from a height (h) with initial velocity zero strikes the ground with a velocity of 30m/s.
How long does it take to reach the ground. Also find h.($g = 10m/s^2$)