C-9 PHYSICS WK-5

Q1) Under what condition is the magnitude of average velocity of an object equal to its average speed?

A1) The object is moving in a straight line.

Q2) What does the path of an object look like when it is in uniform motion?

A2) It will be a straight line.

Q3) During an experiment,a signal from a spaceship reached the ground station in 5 min.What was the distance from the ground station?

A3) speed,s = 3×10^8 m/s

   time,t= 5x60=300 sec.

   distance= speed x time

   $= 900 \times 10^8$ m.

Q4) A bus starting from rest moves with a uniform acceleration of 0.1 m/s^2 for 2 minutes.Find the speed and distance travelled.

Q5) A train is travelling at a speed of 90 km/hr.Brakes are applied to produce acceleration of - 0.5 m/s^2.How far the train will go before it is brought to rest.

Q6) A trolley while going down an inclined plane,has an acc. of 2 cm/s^2. What will be its velocity 3sec after the start?

Q7) An athlete completes one round of a circular track of diameter 200 m in 40 sec. What will be the distance covered and the displacement at the end of 2 min and 20 sec?

A7) circumference = 2x22/7x100 m

distance travelled in 1 sec=(200 x 22/7)/ 40

distance travelled in 140 sec(2min 20 sec)=5 x 22/7 x 140= 2200 m

Number of complete rounds= 2200/ 200x 22/7=7/2 round

Therefore the final position of athlete at the end of 140 sec or just after three and a half rounds is the displacement=200 m or the diameter of track.

VERY SHORT ANSWERS

1) What indicates the motion of earth?

2) What is the simplest type of motion?

3) What do you mean by $2m/s^2$?

4) Can a body have constant speed but variable velocity?

5) When is the acceleration taken as negative?

6) A body is moving with a velocity of 10 m/s.If the motion is uniform ,what will be the velocity after 10 sec.

NOTE- TRY TO SOLVE THE QUESTIONS GIVEN ABOVE AND WRITE IN PHYSICS COPY.ALL THE THREE EQUATIONS OF MOTION ALONG WITH THE DERIVATION VERY IMPORTANT WRITE AND DRAW THE FIGURE ALSO.