Dr. M.K.K. ARYA MODEL SCHOOL, MODEL TOWN, PANIPAT
CLASS 9 (2018-19)
ASSIGNMENT
MOTION

1 MARK QUESTION

Q1. Define the following terms:

a) Motion: when object changes its position with time, w.r.t observer. eg moving car, flying birds.

b) Rest: when object doesnot changes its position with time, w.r.t observer. Eg. Book lying on table, standing bus.

c)Origin: In order to describe position of an object we need to specify reference point called origin.

d) uniform motion: when an object travels equal distance in equal interval of time.

e) non uniform motion: when an object travels unequal distance in equal interval of time.

f) average velocity:when velocity of body is changing at uniform rate over a period of time ,then average velocity of this period is arithmetic mean of initial and final velocity of bo dy.

g) average speed: it is defined as ratio of total distance travelled to the total time taken.

h)instantaneous speed: The speed measured at a particular instant of time is called instantaneous speed.

i)acceleration: Rate of change of velocity of body with time is called acceleration.

j)retardation: when velocity of body decreases with the time then it is called retardation.

k)circular motion: when object moves along circular path with uniform speed,its direction changes continuosly.hence , motion is accelerated motion.

l)scalar quantity :those physical quantity which have only magnitude are called scalar quantities.

m)vector quantity: those physical quantity which have magnitude and direction both are called vector quantities.

Q2. Under what condition distance travelled by an object becomes equal to its displacement?

Ans. When object moves along a straight line distance travelled by an object becomes equal to its displacement

Q3. What does area under velocity-time graph represent?

Ans. area under velocity-time graph represent Displacement

Q4. What does odometer and speedometer of automobile measure?

Ans. odometer tells Distance travelled and speedometer tells instantaneous speed

Q5. What does slope of distance time graph represent?

Ans. slope of distance time graph represent speed

Q6. Under what condition magnitude of average velocity becomes equal to its average speed?

Ans object should move in a straight line

Q7. What conclusion will you draw about acceleration of object when its velocity time graph is a straight line parallel to time axis?

Ans. when velocity time graph is a straight line parallel to time axis then object has Zero acceleration

Q8. An object moves along uniform circular path with constant speed. Is motion of object uniform or accelerated?

Ans. An object moves along uniform circular path with constant speed has Accelerated motion.

Q9. A geostationary satellite revolves around earth in circular orbit of height 36000km above surface of earth. What is displacement of satellite in one round?

Ans. Displacement will be zero

Q10. What is ratio of displacement to distance when object moves along a straight line?

Ans. ratio of displacement to distance when object moves along a straight line is one

Q11. What is centripetal force?

Ans. The force acting on a body when it is moving in a circle.

Q12. What are S.I units of :-

a)distance and displacement-meter

b)speed and velocity:-meter/sec

c)acceleration-meter/(sec)^2

Q13. What is acceleration of body moving with uniform velocity?

Ans. acceleration of body moving with uniform velocity zero

Q14. What type of motion is motion of tip of second's hand of a watch?

Ans. Circular motion

Q15. What changes continuosly in uniform circular motion?

Ans. velocity

Q16. What remains constant in uniform circular motion?

Ans. speed

Q17. An artificial satellite revolves around the earth with constant velocity. Is the statement true?

Ans. No, the statement is wrong. Only the speed of the artificial satellite is constant. Its velocity changes continously due to continous change in the direction of motion.

Q18. A body falls freely. What is constant?

Ans. Its acceleration remains constant

2or 3 MARK QUESTION

Q 19. What is the difference between Uniform Accelerated and Non Uniform accelerated motion?

S.No	Uniformly accelerated	Non uniformly accelerated
1	A body is said to be in uniform acceleration if it travels in a straight line and its velocity increases or decreases by equal amounts in equal intervals of time.	A body is said to be in non uniform acceleration if the rate of change of its velocity is not constant in equal intervals of time
2	Motion under acceleration under gravity is perfect example for uniform accelerated motion	A car moving in a straight line. Some time putting more pressure on the accelerator pedal is a perfect example of non uniform accelerated motion.
3	Following equations could be use here $v^2=u^2+2aS$	No equation available

S.No	Uniformly accelerated	Non uniformly accelerated
	v= u + at s=ut+at^2/2	

Q20. Difference between Speed and Velocity?

Speed	Velocity
It is a Scalar quantity	It is a Vector Quantity
It is distance traveled by an object per unit time	It is the displacement covered by an object per unit of time.
It component are Distance, time	Its component are Distance, time and direction of motion
Average speed is given by Distance/time	Average Velocity is given by Displacement/time

Q21. A stone is tied to one end of a string is rotated in a circle. Explain what happens when stone is released?

Ans. The stone continues to move along the direction it has been moving at that instant when external forces stops to act on it.

5 MARK QUESTION

Q22. Derive all equations of motion graphically for a body moving with uniform acceleration?