NEW STANDARD ACADEMY

Marks: 60

Date : 19-05-25   CLASS : 11TH NEET   Time: 3 hours.

PHYSICS

1. An old man goes for morning walk on a semi-circular track of radius 40 m. If he starts from one end of the track and reach to other end, the distance covered by the man and his displacement will be ?

2. A body traverses half of the distance with a speed V_0 the remaining part of the distance was covered with speed V_1 for half time and with speed V_2 for the other half of the time. What is the mean speed of the body averaged over the whole time of motion.

3. A car moves from P to Q. it moves with velocity of magnitude av, bv and cv for interval of times T/a,T/b and T/c respectively, where T is the total time of journey. What is the average speed of the car during journey from P and Q .

4. A train travels from one station to another at a speed of 40 km/h and returns to the first station at the speed of 60 km/h. Calculate the average speed and average velocity of the train.

5. The relation $3t=\sqrt{3x} + 6$ discribes the displacement of a particle in one direction, where x is in metres and t in second. Then find the displacement when velocity is zero.

6. A particle travels from A to B along the circular path of radius R having its centre at point O such that $\angle AOB = 120^0$. Find the distance and displacement of particle.

7. A particle travels with speed V_1 for time t_1 and V_2 for time t_2. Find the average speed of journey.

8. A particle travels from A to B along the circular path of radius R as shown in figure . Distance and displacement of the particle are respectively
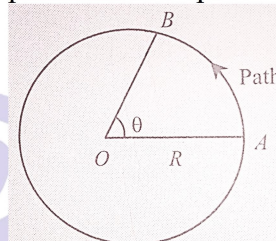
9. Position of a particle moving along x- axis is given by $x = t^2 - 6t + 8$. Here t is in seconds. Initial position of particle is?

10. A particle is moving in such a way that its speed v varies with time $v = 4t$. Distance travelled by the particle in the fourth second of the journey is?

CHEMISTRY

1. Why the term average atomic mass is used?

2. When does the law of constant proportions fail?

3. Which is more concentrated 1M H_2SO_4 or 1N H_2SO_4?

4. If density of water is 1 g/mL, then calculate its density in S.I. units.

5. What is meant by one gram atom of iron?

6. What is the mass of one mole electron , one mole proton and one mole neutron?

7. Give one example of each of the following:
   (i) isotope of $_1H^1$ and $_8H^{16}$
   (ii) isobar of $_{20}Ca^{40}$
   (iii) isotone of $_{15}P^{31}$

8. What are isoelectronic species ? Give the examples.

9. What is the mole fraction of the solute in 2.5 m aqueous solution?

10. In an organic compound, C = 40%, H = 6.6 % and O=53.4% .If the V.D of the organic compound is 30 what is its molecular formula?

BIOLOGY

1. What are macromolecules? Give examples.

2. What is cell cycle?

3. What is crossing over? In which stage of meiosis does this event occurs?

4. What is the difference between mitosis and meiosis?

5. Which stage of the cell cycle lasts longer?

6. Write brief note on the following
    (i) Synaptonemal complex
    (ii) Metaphase plate
7. What are cell cycle checkpoints, and why are they important?
8. Comment on the statement" Telophase is reverse of prophase"
9. What is Disaccharide give example.?
10. Is the interphase of meiosis different from the interphase of mitosis?