

# NEW STANDARD ACADEMY

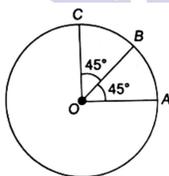
Date : 27-05-24

CLASS : 11<sup>TH</sup>NEET

Marks: 60  
Time: 3 HRS

## PHYSICS

1. Write down equation of trajectory of a body moving in plane.
2. The velocity of a body moving with a uniform acceleration of  $2 \text{ m./sec}^2$  is  $10 \text{ m/sec}$ . its velocity after an interval of 4 sec is
3. From the top of tower  $156.8 \text{ m}$  high a projectile is fired with a velocity of  $39.2 \text{ ms}^{-1}$  making an angle  $30^\circ$  with horizontal direction . Find the distance from the foot of tower where it strikes the ground and time taken by it to do so.
4. A stone is thrown at an angle of  $30^\circ$  with vertical. If the horizontal component of its velocity is  $19.6 \text{ ms}^{-1}$ , Find the maximum height and horizontal range.
5. A body starts from the origin and moves along the X-axis such that the velocity at any instant is given by  $(4t^3 - 2t)$ , where t is in sec and velocity in m/s. what is the acceleration of the particle , when it is  $2 \text{ m}$  from the origin
6. A motor car moving with a uniform speed of  $20 \text{ m/sec}$  comes to stop on the application of brakes after travelling a distance of  $10 \text{ m}$ . Its acceleration is?
7. Find the resultant of three vectors  $\vec{OA}$ ,  $\vec{OB}$ , AND  $\vec{OC}$  shown in the following figure. Radius of the circle is R.



8. The length of second's hand in watch is  $1 \text{ cm}$ . The change in velocity of its tip in 15 seconds is
9. The motion of particle along a straight line is described by equation  $x = 8 + 12t - t^3$  where x is in meter and t in second. The

retardation of the particle when its velocity becomes zero is ?

10. The velocity of a body under the influence of uniform acceleration becomes zero in one hour. The corresponding distance covered is  $39 \text{ m}$ . The distance covered by the body in next one hour will be?

## CHEMISTRY

1. For each of the following pairs from which it is easier to remove the electron:
  - a)  $\text{Be}^+$  or  $\text{Mg}^{2+}$
  - b) I or  $\text{I}^-$
  - c) K or Ar
  - d) N or O
2. The first and second ionization enthalpies of Mg are  $740$  and  $1450 \text{ kJ/mol}$ . Now one gram of  $\text{Mg(g)}$  is allowed to absorb  $50 \text{ kJ}$  of energy. Calculate the moles of  $\text{Mg}^+(g)$  and  $\text{Mg}^{2+}(g)$  formed
3.  $\text{A}^+\text{B}^-$  and  $\text{A}^-\text{B}^+$  can be formed from elements (A) and (B). Explain their formation based on relative value of (EN),(EA) and (IE).
4. Arrange the following compounds in order of their decreasing stabilities:  
 $\text{HF}, \text{CCl}_3, \text{HBr}, \text{HI}, \text{HCl}$   
(Given EN values of elements as below)  
 $\text{H}=2.1, \text{F}=4, \text{Cl}=3.0, \text{Br}=2.8, \text{I}=2.3, \text{N}=3.0$
5. Calculate the electronegativity of chlorine .Given the bond energies of  $\text{Cl}_2$   $= 58 \text{ Kcal/mole}$ ,  $\text{F}_2 = 38 \text{ Kcal/mole}$  and  $\text{Cl-F} = 61 \text{ k cal/mole}$ . Given electronegativity of fluorine is  $4.0$ .
6. Energy of electron in the ground state of the hydrogen atom is  $-2.18 \times 10^{-18} \text{ J}$ . calculate the ionization enthalpy of atomic hydrogen in terms of J/mol

- Among the second period elements, the actual ionization enthalpies are in the order:  $\text{Li} < \text{B} < \text{Be} < \text{C} < \text{O} < \text{N} < \text{F} < \text{Ne}$  explain why : (a) Be has higher  $\Delta_i H$  than B (b) O has lower  $\Delta_i H$  than N and F?
- What are the various factors due to which the ionization enthalpy of the main group elements tends to decrease down the group?
- Valence electrons in the element A are 3 and that in element B are 6. Most probable compound formed from A and B is?
- The maximum covalency of N is 4 while that of P is 5. Account for the above statement.

### BIOLOGY

- What is competitive inhibitor explain with example.
- What is role of enzyme in activation energy for chemical reaction explain it?
- Define turn over number with example.
- Define (i) Apo enzyme (ii) Co-factor.
- What are N base in nucleotide explain it
- Define- Glycogen, Polypeptide bond
- What is Co enzymes.
- What are Lactose give its monosaccharide name
- What is  $K_m$  value give its important.
- Why enzymes are called biocatalysts