

# NEW STANDARD ACADEMY

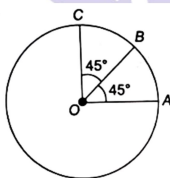
Date : 27-05-24

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  $30$  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  $\text{m/s}$ . 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)  $\text{I}$  or  $\text{I}^-$
  - c)  $\text{K}$  or  $\text{Ar}$
  - d)  $\text{N}$  or  $\text{O}$
2. The first and second ionization enthalpies of  $\text{Mg}$  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  $\text{J/mol}$

7. 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?
8. What are the various factors due to which the ionization enthalpy of the main group elements tends to decrease down the group?
9. Valence electrons in the element A are 3 and that in element B are 6. Most probable compound formed from A and B is?
10. The maximum covalency of N is 4 while that of P is 5. Account for the above statement.

### BIOLOGY

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