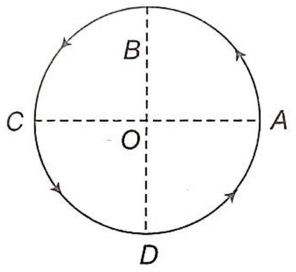
NEW STANDARD ACADEMY

Marks: 60

Date : 01-07-24 **CLASS : 11TH NEET** **Time: 3 HRS**

PHYSICS

1. A stone is thrown at an angle of 30° with vertical. If the horizontal component of its velocity is 19.6 m s^{-1}, find the maximum height and horizontal range.
2. Show that there are two angles of projection for which the horizontal range is same. Also show that the sum of the maximum heights for two angles is independent of angle of projection.
3. A man standing on a road holds his umbrella at 30° with the vertical to keep the rain away. He throws the umbrella and starts running at 10 km/hr. He finds that raindrops are hitting his head vertically, the speed of raindrops with respect to the road will be:
4. Rain is falling with a speed of $12\sqrt{2}$m/s at angle of 45° with the vertical line. A man in glider going at a speed of u at an angle of 37° with respect to the ground. Find the speed of the glider so that rain appears to him falling vertically. Consider the motion of the glider and rain drops in the same vertical plane:
5. Rain is falling vertically downwards with a speed of 4 km/h. A girl moves on a straight road with a velocity y of 3 km/h. The apparent velocity of rain with respect to the girl is:
6. A man is cycling at 4 m/s On a horizontal rod. To him, rain appears from vertical. If he doubles his velocity, rain appears to fall at 60^0 the velocity of the rain:
7. A projectile will cover the maximum vertical distance in the minimum time when the angle of projection with vertical is?
8. Figure shows a body of mass m moving with a uniform speed v along a circle of radius r. The change in velocity in going from A to B is



9. For a particle in circular motion the centripetal acceleration is?
10. A fan is making 600 revolutions per minute. If after some time it makes 1200 revolutions per minute, then increase in its angular velocity is

CHEMISTRY

1. Draw the Born-Haber cycle for $MgCl_2$ (S)
2. Define Solvation or Hydrations and write its applications
3. what do you by formal charge
4. What is Hydrogen bonding. Explain its types
5. Draw the resonating structures of the following:
   i) O-nitrophenol
   ii) Benzene
   iii) Sulphate ion
6. Explain the shape and Hybridization in CO_3^{2-} ion
7. Explain the shape and Hybridization in IF_3 on the Basis of VSEPR Theory
8. what is dipole moment write its applications
9. Draw the energy level diagrams for O_2^{2-}, & write its magnetic behavior, Bond order and electronic configuration-
10. How bond energy varies from N_2^- to N_2^+ and why?

BIOLOGY

1. Name an association between a fungus and the roots of higher plants. Give its important.
2. What is plasmogamy? Give the example.
3. Why do the members of deuteromycetes are called 'Imperfect fungi'?
4. Define the terms – phycobiont and mycobiont. Mention their functions?
5. What is Prions?
6. Draw the structure of bacteriophage.
7. What is Dikaryon phase give the example?
8. Define
   a) Hyphae B) Mycelium
9. Give the difference between aseptate and coenocytic mycelium .
10. What is Viroids ?