NEW STANDARD ACADEMY

Semri Kothi Super Market, Raebareli
CLASS 10 DPP (Academy) 26-08-2025

PHYSICS

1. On what factors the resistance of a conductor depends?
2. In which configuration, a fuse is placed in a device?
3. On what factors the resistivity of a conductor depends?
4. SI unit of electric power.
5. What is Commercial unit of Electric Power.

CHEMISTRY

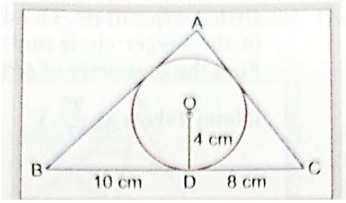
1. (i) Complete and balance the following chemical equations:
   (a) Al_2O_3 + HCI → (b) KO+H_2O →
   (c) Fe+ H_2O→
   (ii) An element "X" displaces iron from the aqueous solution of iron sulphate. List your observations if the element "X' is treated with the aqueous solutions of copper sulphate, zinc sulphate and silver nitrate. Based on the observations arrange X. Zn. Cu and Ag in increasing order of their reactivities.
2. A metal M' is stored under kerosene. It vigorously catches fire, if a small piece of this metal is kept open in air. Dissolution of this metal in water releases great amount of energy and the metal catches fire. The solution so formed turns red litmus blue.
   (i) Name the metal M
   (ii) Write formula of the compound formed when this metal is exposed to air.
   (iii) Why is metal 'M' stored under kerosene?
   (iv) If oxide of this metal is treated with hydrochloric acid, what would be the products?
   (v) Write balanced equation for:
   (a) Reaction of f' with air.
   (b) Reaction of' M' with water.
   (c) Reaction of metal oxide with hydrochloric acid.
3. (i) By the transfer of electrons, illustrate the formation of bond in magnesium chloride and identify the ione present in this compound.
   (ii) Ionic compounds are solids. Give reasons.
   (iii) With the help of a labelled diagram show the experimental setup of action of steam on a metal.
4. (a) In the formation of compound between two atoms A and B, A loses two electrons and Bgains one electron.
      (i) What is the nature of bond between A and B?
      (ii) Suggest the formula of the compound formed between A and B
   (b) On similar lines explain the formation of MgCl2 molecule.
   (c) Common salt conducts electricity only in the molten state. Why?
   (d) Why is melting point of NaCl high?
5. (a) Write the steps involved in the extraction of pure metals in the middle of the activity series from the carbonate ores.
   (b) How is copper extracted from its sulphide ore? Explain the various steps supported by chemical equation

BIOLOGY

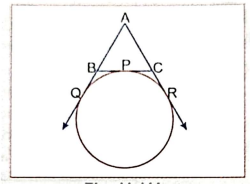
1. Define an ecosystem draw a block diagram to show the flow of energy in an ecosystem
2. What will happen if the dear is missing in the following food chain.grass-deer -tiger
3. List the two natural and artificial ecosystem
4. What is the biological magnification explain?
5. Why are green plants called producer?

MATHS

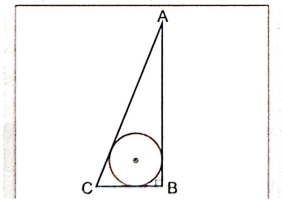
1. In a triangle ABC is drawn to circumscribe a circle of radius 4 cm such that the segments BD and DC are of lengths 10 cm and 8 cm respectively. Find the lengths of sides AB and AC, if it is given that area ΔABC = 90cm^2



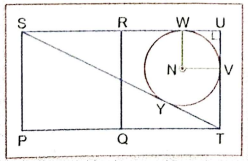
2. In a circle touches the side BC of a triangle ABC at a point P and touches AB and AC when produced at Q and R respectively. Show that AQ = 1/2 (Perimeter of ΔABC)



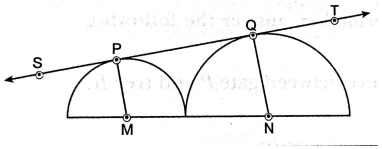
3. In, a right triangle ABC in which angle B = 90° , AB = 12 cm and BC = 5 cm is shown. Find the radius of the circle inscribed in the triangle ABC.



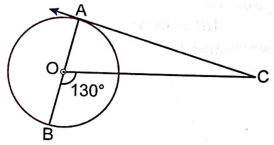
4. In is a circle and 2 congruent squares (PQRS & QTUR). ST, SU and UT are tangents to the circle. The side length of the square is 10 cm. Find the radius of the circle.



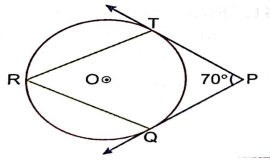
5. In M and N are the centres of two semi-circles having radii 9 cm and 16 cm, respectively and ST is a common tangent. Find the length of PQ.



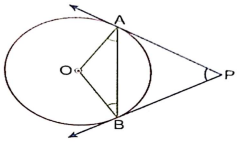
6. In AOB is a diameter of a circle with centre O and AC is a tangent to the circle at A. If ∠BOC = 130°, then find ∠ACO.



7. In O is the centre of a circle. PT and PQ are tangents to the circle from an external point P. If ∠TPQ = 70°, find ∠TRQ.



8. In Fig PA and PB are tangents drawn to a circle of centre O from an external point P. Chord AB makes an angle of 30° with the radius at the point of contact. If length of the chord is 6 cm, find the length of the tangent PA and the length of the radius OA.



9. The radii of two concentric circles are 13 cm and 8 cm. AB is a diameter of the bigger circle and BD is a tangent to the smaller circle touching it at D and intersecting the larger circle at P on producing. Find the length of AP.
In Fig. common tangents AB and CD to two circles intersect at E. Prove that AB = CD.