NEW STANDARD ACADEMY

SEMRI KOTHI SUPER MARKET, RAEBARELI
CLASS 10 (PHYSICS) DPP (Academy) 02/09/2024

1. Why does a compass needle get deflected when brought near a bar magnet ?
2. Draw magnetic field lines around a bar magnet.
3. List the properties of magnetic lines of force.
4. Why do not two magnetic lines of force intersect each other?
5. Consider a circular loop of wire lying in the plane of the table. Let the current passing through the low clockwise. Apply the right hand rule to find out the direction of magnetic field inside and outside loop.
6. The magnetic field in a given region is uniform. Draw a diagram to represent it.
7. Choose the correct option:
   The magnetic field inside a long straight solenoid carrying current is:
   (a) zero
   (b) decreases as we move inwards its ends
   (c) increases as we move towards its ends
   (d) is the same at all points.
8. Which of the property a proton can change when it moves freely in a magnetic field?
9. In activity (Force on a current-carrying conductor in a magnetic field), how do we think the displacement of rod AB will be affected if (i) current in rod AB is increased (ii) a stronger horse shoe magnet is inserted (iii) length of the rod AB is increased.
10. A positively charged particle (alpha particle) projected towards west is deflected towards north by a magnetic field. The direction of magnetic field is
11. State Fleming's left hand rule.
12. What is the principle of electric motor?
13. What is the role of the split ring in an electric motor?
14. Explain different ways to induce current in a coil.
15. State the principle of electric generator.
16. Name some sources of direct current.
17. Which source produces alternating current?
18. An electric oven of 2 kW power rating is operated in a domestic electric circuit (220V) that has a current rating of 5A. What result do you except? Explain.
19. State the factors on which the strength of magnetic field at a point due to a current carrying conductor depends.
20. On what factors does the magnetic field produced by a current carrying solenoid depend?

NEW STANDARD ACADEMY

SEMRI KOTHI SUPER MARKET, RAEBARELI
CLASS 10 (CHEMISTRY) DPP (Academy) 02/09/2024

1. Which metal gives H_2 with (i) cold water, (ii) hot water and (iii) steam?
2. Which elements form (i) basic oxide (ii) acidic oxide (iii) amphoteric oxide ?
3. Select acidic, basic and amphoteric oxides from the following:
   Na_2O, CO_2, ZnO, K_2O, Al_2O_3, MgO, SO_2
4. Look at the following reactions and tell the nature of oxide:
   $Na_2O + 2HCl \rightarrow 2NaCl + H_2O$
   $CO_2 + 2NaOH \rightarrow Na_2CO_3 + H_2O$
   $MgO + H_2SO_4 \rightarrow MgSO_4 + H_2O$
   $ZnO + 2HCl \rightarrow ZnCl_2 + H_2O$
   $ZnO + 2NaOH \rightarrow Na_2ZnO_2 + H_2O$
5. Which metal do not react with HCl or H_2SO_4 to give H_2 gas ? Explain it also.
6. Why does HNO_3 not give H_2 with metals? Which metals give Hy with HNO_3?
7. What is aqua regia and its nature? Name the metal which does not dissolve in HCl, H_2SO_4, and HNO_3, but dissolves in aqua regia.
8. In nature, metal A is found in uncombined state (free state) whereas metal Bis found in combined state in the form of compounds. Which metal is (i) more reactive and (ii) is present in upper position in reactivity series?
9. Hydrogen is a non-metal and even then it is included in reactivity series of metals, why?
10. Which two metals are (i) more reactive than hydrogen and (ii) less reactive than hydrogen ?
11. Which of the following is in top position in reactivity series (i) Cu, Ag, Zn (ii) Fe, Cu, Hg (iii) Au, Cu, Al
12. $Fe(s) + CuSO4\ (aq) \rightarrow FeSO4(aq) + Cu(a)$
    $Zn(s) + FeSO4\ (aq) \rightarrow ZnSO4\ (aq) + Fe(s)$
    On the basis of above reactions, explain which is most reactive and which is least reactive metal?
13. Which of the following reactions occur? Complete and balance the equations.
    (i) $MgSO_4(aq) + Zn(s) \rightarrow$
14. Why is sodium kept immersed in kerosene
15. Why does aluminium not react with water to produce H_2 under ordinary corditions?
16. An element (X) froms an oxide X_2O_3 which dissolves in an acid. Explain whether the element (X) is metal or non-metal?
17. There are three metals – Na Mg and Ag. Suggest two chemical reactions which confirm their positions in activity series of metals.
18. Between copper and sodium which metal is more reactive? Explain with reasons.
19. What are the main points of difference in the physical and chemical properties of metals and non- metals?
20. What happens when (i) potassium reacts with cold water (ii) iron reacts with steam.

NEW STANDARD ACADEMY

SEMRI KOTHI SUPER MARKET, RAEBARELI
CLASS 10 (MATH'S) DPP (Academy) 02/09/2024

1. A cube of 9 cm edge is immersed completely in a rectangular vessel containing water. If the dimensions of the base are 15 cm and 12 cm. Find the rise in water level in the vessel.
2. A right circular cone is 3.6 cm high and radius of its base is 1.6 cm. It is melted and recast into a right circular cone with radius of its base as 1.2 cm. Find its height.
3. A solid cube of side 7 cm is melted to make a cone of height 5 cm, find the radius of the base of the cone.
4. A solid sphere of radius 3 cm is melted and then cast into small spherical balls each of diameter 0.6 cm. Find the number of balls thus obtained.
5. How many spherical bullets can be made out of a solid cube of lead whose edge measures 44 cm, each bullet being 4 cm in diameter.
6. A spherical canon ball, 28 cm in diameter is melted and cast into a right circular conical mould, the base of which is 35 cm in diameter. Find the height of the cone, correct to one placed of decimal.
7. A room is half as long again as it is broad. The cost of carpeting the room at – j 3.25 per m^2 is – j 175.50 and the cost of papering the walls at – j 1.40 per m^2 is – j 240.80. If 1 door and 2 windows occupy 8 m^2, find the dimensions of the room.
8. An agricultural field is in the form of a rectangle of length 20 m and width 14 m. A pit 6 m long, 3 m wide and 2.5 m deep is dug in a corner of the field and the earth taken out of the pit is spread uniformly over the remaining area of the field. Find the extent to which the level of the field has been raised.
9. A wooden toy is in the form of a cone surmounted on a hemisphere. The diameter of the base of the cone is 6 cm and its height is 4 cm. Find the cost of painting the toy at the rate of – j 5 pr 1000 cm2.
10. A solid wooden toy is in the shape of a right circular cone mounted on a hemisphere. If the radius of the hemisphere is 4.2 cm and the total height of the toy is 10.2 cm, find the volume of the wooden toy.
11. Find what length of canvas 2m in width is required to make a conical tent 20 m in diameter and 42m in slant height allowing 10% for folds and stitching. Also find the cost of canvas at the rate of – j 60 per metre.
12. From a solid cylinder whose height is 8 cm and radius is 6 cm, a conical cavity of height 8 cm and of base radius 6 cm, is hollowed out. Find the volume of the remaining solid correct to 4 significant figures. (π = 3.1416). Also find the total surface area of the remaining solid.
13. The entire surface of solid cone of base radius 3 cm and height 4 cm is equal to the entire surface of a solid right circular cylinder of diameter 4 cm. Find the ratio of (i) their curved surface; (ii) their volumes.
14. An open cylinder vessel of internal diameter 7 cm and height 8 cm stands on a horizontal table. Inside this is placed a solid metallic right circular cone, the diameter of whose base is $\frac{7}{2}$cm and height 8 cm. Find the volume of water required to fill the vessel.
15. A right circular cone of height 20 cm and base diameter 30 cm is cast into smaller cones of equal sizes with base radius 10 cm and height 9 cm. Find how many cones are made.
16. A sphere of diameter 6 cm is dropped in a right circular cylindrical vessel partly filled with water. The diameter of the cylindrical vessel is 12 cm. If the sphere is completely submerged in water, by how much will the level of water rise in the cylindrical vessel ?
17. An iron pillar has some part in the form of a right circular cylindrical and the remaining in the form of a right circular cone. The radius of the base of each of the cone and cylinder is 8 cm. The cylindrical part is 240 cm high and the conical part is 36 cm high. Find the weight of the pillar if one cu cm of iron weights 7.8 grams.
18. A hemispherical bowl of internal diameter 36 cm contains a liquid. This liquid is to be filled in cylindrical bottles of radius 3 cm and height 6 cm. How many bottles are required to empty the bowl?
19. If the radius of the base of a right circular cylinder is halved, keeping the height same, find the ratio of the volume of the reduced to that of the original cylinder.
20. A toy is in the form of a cone mounted on a hemisphere of radius 3.5 cm. The total height of the toy is 15.5 cm. Find the total surface area and the volume of the toy.

NEW STANDARD ACADEMY

SEMRI KOTHI SUPER MARKET, RAEBARELI
CLASS 10 (BIOLOGY) DPP (Academy) 02/09/2024

1. Why is improper disposal of wastes a curse to environment ?
2. Write the common food chain of a pond ecosystem.
3. What are the advantages of cloth bags over plastic bags during shopping ?
4. Why are crop fields known as artificial ecosystems ?
5. Explain the role of decomposers in the environment.
6. We do not clean ponds or lakes but an aquarium need to be cleaned why ?
7. Suggest any four actvities in daily life which are ecofriendly.
8. Name the wastes which are generated in your house daily . What meaures would you take for their disposal ?
9. What are the by products of fertilizer industries ? How do they affect the environment.
10. Explain some harmful effect of agricultural practices on the enviroment .
11. Why are some substances biodegradable and some non – biodegradadle ?
12. Give any two ways in which biodegradable substances would affect the environment.
13. Give any two ways in which non-biodegradable substances would affect the environment.
14. What are trophic levels ? Give an example of food chain and state the different trophic levels in it.
15. What is the role of decomposers in the ecosystem ?
16. What is Ozone and how does it affect any ecosystem ?
17. How can You help in reducing the problem of waste disposal ? Give any two methods.
18. What will happen if we kill all the organisms in one trophic level ?
19. Will the impact of removing all the organisms in a trophic level be differeent for different trophic levels ? Can the organisms of any trophic level be removed without causing any damage to the ecosystem ?
20. What is biological magnification ? Will the levels of this magnification be different at different levels of the ecosystem ?