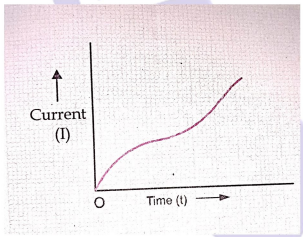
NEW STANDARD ACADEMY

Date : 09-09-24 **CLASS : 10TH** **Marks: 80** **Time: 3 HRS**

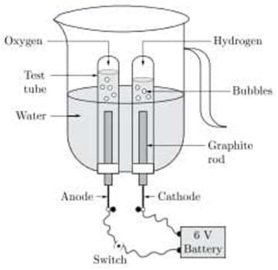
PHYSICS

1. What is a galvanometer ?
2. Define direct current (D.C.)Give some sources of direct current.
3. Depict current versus time graph of direct current.
4. Define alternating current (A.C.).
5. Why is an alternating current considered to be advantageous over direct current for long range transmission of electric energy?
6. What is the meaning of the term "frequency" of an alternating current ? What is its value in India?
7. An alternating current has frequency of 50 Hz. How many times does it change its direction in one second ? How many times does AC used in India change direction in one second ?
8. What is the frequency of direct current (D.C.)? State the frequency of power supply generated in India.
9. State Two advantage of A.C. over D.C
10. Identify the type of current



CHEMISTRY

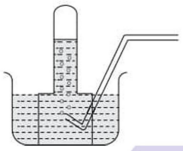
1. Identify the type of reactions taking place in each of the following cases and write the balanced chemical equation for the reactions,
   (i) Zine reacts with silver nitrate to produce zinc nitrate and silver.
   (ii) Potassium iodide reacts with lead nitrate to produce potassium nitrate and lead iodide.
2. (1) Explain the following terms with one example each:
   (a) Corrosion
   (b) Rancidity
   (ii) Explain two ways by which food industries prevent rancidity.
3. Discuss the physical properties of non-metals.
4. Study the figure given below and answer the following questions:



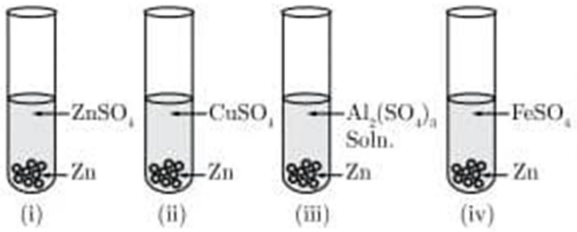
   (a) Name the process depicted in the diagram.
   (b) Write the composition of the anode and the cathode
5. Oxidation is the process of gaining of oxygen or losing of hydrogen. Reduction is the process of losing of oxygen or gaining of hydrogen. The substance which undergoes oxidation is the reducing agent while the substance which undergoes reduction is known as the oxidising agent. Oxidation and rednetion always take place together and these type of reactions are known as redox reactions. Some of the examples of redox reactions are given below:
   (a) $2Mg+O_2 \rightarrow MgO$
   (b) $CuSO_4+Zn \rightarrow Cu+ZnSO_4$
   (c) $V_2O+5Ca \rightarrow 2V+5CaO$
   (d) $3Fe + 4H_2O \rightarrow Fe_2O_4+4H_2$
   (e) $CuO+H_2 \rightarrow Cu+H_2O$
   (i) Give two examples of oxidation reaction from your everyday life.

(ii) Write the oxidising agent in the reaction a and b.

6. A metal is treated with dil H_2SO_4, the gas evolved is collected by the method shown in the figure. Answer the following:
   (i) Name the gas,
   (ii) Name the method of collection of the gas,



7. Tooth enamel is one of the hardest substances in our body. How does it undergo damage due to eating chocolates and sweets? How do tooth pastes prevent this damage ?
8. Account for the following
   (a) State the relation between hydrogen ion concentration of an aqueous solution and its pH.
   (b) An aqueous solution has a pH value of 7.0. Is this solution acidie, basic or neutral.
   (c) Which has a higher pH value, 1 MHCl or 1 M NaOH solution?
   (d) Tooth enamel is one of the hardest substances in our body. How does it undergo damage due to eating chocolates and sweets? What should we do to prevent it.
   (e) How doe [H] ions exist in water?
9. Zine granules were added to zinc sulphate, copper sulphate, aluminium sulphate and iron sulphate solutions as shown below:



Based on the given information:
(i) In which test tubes would you observe the deposition of metal on zine? Give reason.
(ii) Arrange Zn, Cu, Al and Fe in the increasing order of reactivity.`

10. What is the action of litmus on (i) dry ammonia gas (ii) solution of ammonia gas in water ?

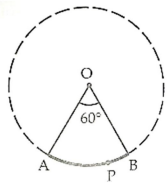
BIOLOGY

1. What are the advantages of cloth bags over plastic bags during shopping?
2. Suggest any four activities in daly life which are ecofriendly.
3. Name the wastes which are generated in your house daily . What measures would you take for their disposal?
4. Give any two ways in which non-biodegradble substances would affect the environment.
5. What are trophic levels? Give an example of food chain and state the different trophic levels in it.
6. How can you help in reducing the problem of waste disposal? Give any two methods.
7. What will happen if we kill all the organisms in one trophic level?
8. What is biological magnification ? Will the levels of this magnification be different at different levels of the ecosystem?
9. List four component in food chain.
10. What is the differences between food chain and food web.

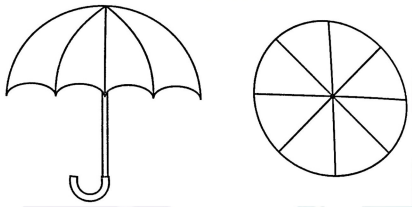
MATH'S

1. The wheels of a car are of diameter 80 cm each. How many complete revolutions does each wheel make in 10 minutes when the car is is travelling at a speed of 66 km/h?
2. Two circles touch externally. The sum of their areas is $58\pi/cm^2$ and the distance between their centres is 10 cm. Find the radii of the two circles.
3. Find the circumference of the circle whose area is 16 times the area of the circle with diameter 7 cm.
4. The area of a circular ring enclosed between two concentric circles is $286cm^2$. Find the radii of the two circles, given that their difference is 7 cm.
5. Find the area of the sector of a circle with radius 4 cm and of angle 30°. Also, find the area of the corresponding major sector (use $\pi = 3.14$).
6. A piece of wire 20 cm long is bent into the form of an arc of a circle subtending an

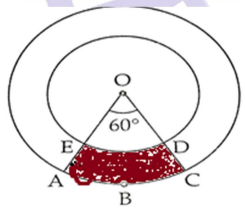
angle of 60° at its centre. Find the radius of the circle



7. An umbrella has 8 ribs which are equally spaced (shown in the adjoining figure). Assuming the umbrella to be a flat circle of radius 45 cm, find the area between its two consecutives ribs.



8. A piece of wire 22 cm long is bent into the form of an arc of a circle subtending an angle of 60° at its centre. Find an radius of the circle. Use $\pi = 22/7$
9. In the figure (i) given below, two concentric circles with centre O are shown. Radii of the circles are 2 cm and 5 cm. Find the area of the shaded region.



(*i*)

10. Find the area of the shaded region in the adjoining figure, where radii of the two concentric circles with centre O are 7 cm and 14 cm respectively and $\angle AOB = 40°$.