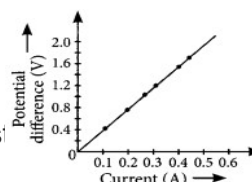


**Topics: METALS AND NON METALS
ELECTRICITY
REPRODUCTION**

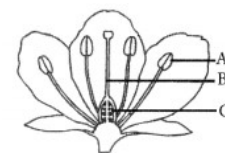
- 1) Reverse of the following chemical reaction is not possible:

$$\text{Zn}_{(s)} + \text{CuSO}_{4(aq)} \rightarrow \text{ZnSO}_{4(aq)} + \text{Cu}_{(s)}$$
 Justify this statement with reason.
- 2) What is meant by amphoteric oxides? Choose the amphoteric oxides from the following :
 Na_2O , ZnO , CO_2 , Al_2O_3 , H_2O
- 3) Compare in tabular form the reactivities of the following metals with cold and hot water:
 (a) Sodium (b) Calcium (c) Magnesium
- 4) Give reason for the following:
 - (i) Hydrogen gas is not evolved when most of the metals react with nitric acid.
 - (ii) Zinc oxide is considered as an amphoteric oxide.
 - (iii) Metals conduct electricity.
- 5) Give reason:
 - (a) Aluminium is a reactive metal but is still used for packing food articles.
 - (b) Calcium starts floating when water is added to it.
- 6) A metal 'X' combines with a non-metal 'Y' by the transfer of electrons to form a compound Z.
 - (i) State the type of bond in compound Z.
 - (ii) What can you say about the melting point and boiling point of compound Z?
 - (iii) Will this compound dissolve in kerosene or petrol?
 - (iv) Will this compound be a good conductor of electricity?
- 7) (i) By the transfer of electrons, illustrate the formation of bond in magnesium chloride and identify the ions present in this compound.
 (ii) Ionic compounds are solids. Give reasons.
- 8) An ore on treatment with dilute hydrochloric acid produces brisk effervescence. Name the type of ore with one example. What steps will be required to obtain metal from the enriched ore? Also write the chemical equations for the reactions involved in the process.
- 9) Carbon cannot reduce the oxides of sodium, magnesium and aluminium to their respective metals. Why? Where are these metals placed in the reactivity series? How are these metals obtained from their ores? Take an example to explain the process of extraction along with chemical equations.
- 10) (a) Write the steps involved in the extraction of pure metals in the middle of the activity series from their carbonate ores.
 (b) How is copper extracted from its sulphide ore? Explain the various steps supported by chemical equations. Draw labelled diagram for the electrolytic refining of copper.
- 11) What are alloys. Why they are made? Name first discovered alloy. Give its composition also.
- 12) (i) Silver and copper lose their shine when they are exposed to air. Name the substance formed on their surface in each case.
 (ii) Tarnished copper vessels are cleaned with tamarind juice.
 (iii) Aluminium is more reactive than iron yet there is less corrosion of aluminium as compared to iron when both are exposed to air.
- 13) A current of 10 A flows through a conductor for two minutes.
 - (i) Calculate the amount of charge passed through any area of cross section of the conductor.
 - (ii) If the charge of an electron is 1.6×10^{-19} C, then calculate the total number of electrons flowing.
- 14) Draw the symbols of commonly used components in electric circuit diagrams for

(i) An electric cell	(ii) Open plug key	(iii) Wires crossing without connection	(iv) Variable resistor
(v) Battery	(vi) Electric bulb	(vii) Resistance	
- 15) A V-I graph for a nichrome wire is given below. What do you infer from this graph?
 Draw a labelled circuit diagram to obtain such a graph.
- 16) Calculate the resistivity of the material of a wire of length 1 m, radius 0.01 cm and resis



- 17) A wire has a resistance of $16\ \Omega$. It is melted and drawn into a wire of half its original length. Calculate the resistance of the new wire. What is the percentage change in its resistance?
- 18) A wire has a resistance of $16\ \Omega$. It is melted and drawn into a wire of half its original length. Calculate the resistance of the new wire. What is the percentage change in its resistance?
- 19) List the advantages of connecting electrical devices in parallel with an electrical source instead of connecting them in series.
- 20) Show how you would join three resistors, each of resistance $9\ \Omega$ so that the equivalent resistance of the combination is (i) $13.5\ \Omega$, (ii) $6\ \Omega$
- 21) For the series combination of three resistors current in each resistor, establish the relation $R = R_1 + R_2 + R_3$ where the symbols have their usual meanings. Calculate the equivalent resistance of the combination of three resistors of $6\ \Omega$, $9\ \Omega$ and $18\ \Omega$ joined in parallel.
- 22) (a) Write the mathematical expression for Joules law of heating.
(b) Compute the heat generated while transferring 96000 coulomb of charge in two hours through a potential difference of 40 V .
- 23) (a) Why is tungsten used for making bulb filaments of incandescent lamps?
(b) Name any two electric devices based on heating effect of electric current.
- 24) An electric iron has a rating of 750 W ; 200 V . Calculate:
(i) the current required.
(ii) the resistance of its heating element.
(iii) energy consumed by the iron in 2 hours.
- 25) A bulb is rated 40 W ; 220 V . Find the current drawn by it, when it is connected to a 220 V supply. Also find its resistance. If the given bulb is replaced by a bulb of rating 25 W ; 220 V , will there be any change in the value of current and resistance? Justify your answer and determine the change.
- 26) Newly formed DNA copies may not be identical at times. Give one reason.
- 27) Write two differences between binary fission and multiple fission in a tabular form.
- 28) Name an organism which reproduces by spore formation. List three conditions favourable for spores to germinate and grow.
- 29) On cutting the body of an organism into many pieces, it was observed that many of these pieces developed as new individuals. Name the process and list two organisms in which this process may be observed. Draw a schematic diagram to illustrate the changes that are likely to be observed during the development of new individuals in any one of the organisms named.
- 30) Why is fertilization in plants not possible without pollination?
- 31) What is the main difference between sperms and eggs of humans? Write the importance of this difference.
- 32) "The chromosomal number of the sexually producing parents and their offspring is the same". Justify this statement.
- 33) State the role of placenta in the development of embryo.
- 34) Explain giving one example of each, the unisexual and the bisexual flowers.
- 35) State the changes that take place in the uterus when:
(a) Implantation of embryo has occurred. (b) Female gamete/egg is not fertilised.
- 36) List three techniques that have been developed to prevent pregnancy. Which one of these techniques is not meant for males? How does the use of these techniques have a direct impact on the health and prosperity of a family?
- 37) Name the parts A, B and C shown in the following diagram and state one function of each.
- 38) What are the functions of testes in the human male reproductive system? Why are these located outside the abdominal cavity? Who is responsible for bringing about changes in appearance seen in boys at the time of puberty?
- 39) What are sexually transmitted diseases? List two examples each of diseases caused due to
(i) bacterial infection and (ii) viral infection. Which device or devices may be used to prevent the spread of such diseases?
- 40) Explain with well labeled diagram about human female reproductive system.



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