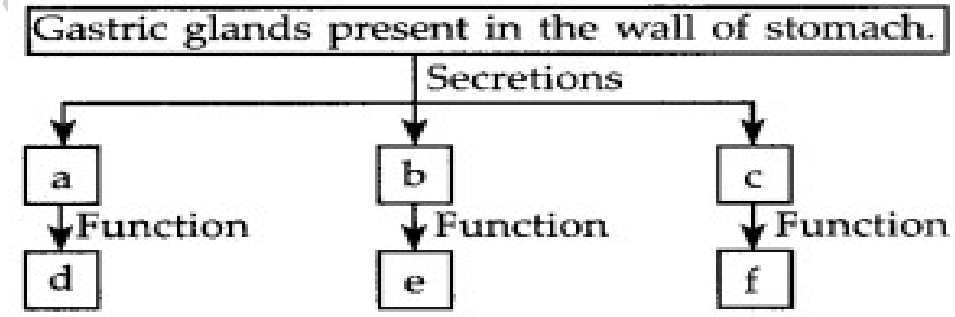
SCIENCE **GARDE X** **Assignment - 1**

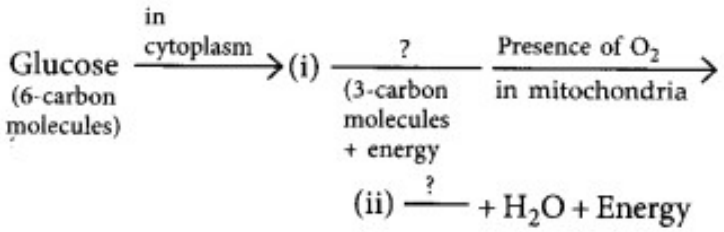
Topics: **Chemical equation and reactions**
Life process
Human eye and colorful world

1) Mention with reason the colour changes observe when:
   (i) silver chloride is exposed to sunlight.
   (ii) copper powder is strongly heated in the presence of oxygen.
   (iii) a piece of zinc is dropped in copper sulphate solution.
2) Lead nitrate solution is added to a test tube containing potassium iodide solution.
   (a) Write the name and colour of the compound precipitated.
   (b) Write the balanced chemical equation for the reaction involved.
   (c) Name the type of this reaction justifying your answer.
3) 2 g of ferrous sulphate crystals are heated in a dry boiling tube.
   (a) List any two observations.
   (b) Name the type of chemical reaction taking place.
   (c) Write balanced chemical equation for the reaction and name the products formed.
4) Decomposition reactions require energy either in the form of heat or light or electricity for breaking down the reactants. Write one equation each for decomposition reactions where energy is supplied in the form of heat, light and electricity.
5) What is a reduction reaction?
   Identify the substances that are oxidised and the substances that are reduced in the following reactions.
   (a) $Fe_2O_3 + 2Al \rightarrow Al_2O_3 + 2Fe$
   (b) $2PbO + C \rightarrow 2Pb + CO_2$
6) What happens when food materials containing fats and oils are left for a long time? List two observable changes and suggest three ways by which this phenomenon can be prevented.
7) "We need to balance a skeletal chemical equation." Give reason to justify the statement.
8) What is meant by skeletal type chemical equation? What does it represent? Using the equation for electrolytic decomposition of water, differentiate between a skeletal chemical equation and a balanced chemical equation.
9) Hydrogen being a highly inflammable gas and oxygen being a supporter of combustion, yet water which is a compound made up of hydrogen and oxygen is used to extinguish fire. Why?
10) Distinguish between a displacement reaction and a double displacement reaction.
11) Complete the following flow chart as per the given instructions.



12) (a) What is peristaltic movement?
   (b) 'Stomata remain closed in desert plants during daytime'. How do they do photosynthesis?
13) (a) In the process of respiration, state the function of alveoli.
   (b) Rate of breathing in aquatic organisms is much faster than that in terrestrial organisms. Give reasons.

(c) Complete the following pathway showing the breakdown of glucose.



14) Write three types of blood vessels. Give one important feature of each.
15) What do the following transport?
(i) Xylem (ii) Phloem (iii) Pulmonary vein (iv) Vena cava (v) Pulmonary artery (vi) Aorta
16) Give reasons:
(a) Ventricles have thicker muscular walls than atria.
(b) Transport system in plants is slow.
(c) Circulation of blood in aquatic vertebrates differs from that in terrestrial vertebrates.
(d) During the daytime, water and minerals travel faster through xylem as compared to the night.
(e) Veins have valves whereas arteries do not.
17) Describe the structure and function of nephron with the help of diagram.
18) (a) Name the organs that form the excretory system in human beings.
(b) Describe in brief how urine is produced in human body.
19) (a) "Blood circulation in fishes is different from the blood circulation in human beings". Justify the statement.
(b) Describe "blood circulation" in human beings.
20) Explain how the translocation of materials in phloem tissue in plants is achieved by utilising energy.
21) Define the term power of accommodation. Write the modification in the curvature of the eye lens which enables us to see the nearby objects clearly?
22) Name the three common defects of vision. What are their causes? Name the type of lens used to correct each of them.
23) Draw a ray diagram to show the refraction of light through a glass prism. Mark on it (a) the incident ray, (b) the emergent ray and (c) the angle of deviation.
24) Draw a labelled diagram to explain the formation of a rainbow in the sky.
25) What is 'dispersion of white light'? State its cause. Draw a ray diagram to show the dispersion of white light by a glass prism.
26) Explain in brief the reason for each of the following:
(a) Advanced sun-rise
(b) Delayed sun-set
(c) Twinkling of stars
27) A person with a myopic eye cannot see objects beyond 1.2 m directly. What should be the type of the corrective lens used? What would be its power?
28) (a) List the parts of the human eye that control the amount of light entering into it. Explain how they perform this function.
(b) Write the function of retina in human eye.
29) The near point of the normal eye is 25 cm. The near point of the hypermetropic eye is 1 m. What is the power required to correct the defect?
30) A person is able to see objects clearly when they are lying at distances between 50 cm and 300 cm from the eyes. Which type of vision defect is the person suffering from?