HOLIDAYS HOMEWORK (2025-26)

Class X: Assignment

Chapter-Light: Reflection and Refraction

1. Magnification of a mirror is '—1'. What type of mirror is it? What is the position of object and image? Give the nature of image.

2. Name the type of mirror used: - (i) as a reflector in search light (iii) by the dentist (ii) as side view mirror in vehicles. (iv) as a shaving mirror

3. Wherever you may stand in front of mirror, your image is always erect & same sized, what type of mirror is it?

4. Radius of curvature of a mirror is +24cm. Name the kind of mirror and give the characteristics of the image formed by it.

5.What is the lateral displacement when a ray of light falls normally on a glass slab?

6. Refractive index of water with respect to air is 1.33, what is refractive index of air with respect to water?

7. Under what condition will the angle of refraction be equal to the angle of incidence?

8.If refractive indices of alcohol & water are 1.36 and 1.33 respectively, which of the two is optically denser?

9. A 1 cm high object is placed at a distance of 2F from a convex lens, what is the height of the image formed?

10. Focal length of a lens is 25 cms. What is its power?

11. Find the position, nature and size of the image of an object 3 cm high placed at a distance of 9 cm from a concave mirror of focal length 18 cm. (v = 18 cm, h = 6 cm)

12.. An object 4 cm high is placed 40 cm in front of a concave mirror of focal length 20 cm. Find the distance from the mirror, at which a screen be placed to obtain a sharp image. (v= -40cm)

13. A convex lens has focal length of 30 cm. At what distance should object be placed from the lens so that it forms an image at 60 cm on other side of the lens? Find the magnification produced by the lens. (v=- 60 cm, m = -1)

14. An arrow 2.5cm high is placed at a distance of 25 cm from a diverging mirror of focal length 20 cm. find the nature, position and size of the image formed (11.1, 1.11cm).

15. An erect image 3 times the size of the object is obtained with a concave mirror of radius of curvature 36 cm. calculate the position of the object. (-12cm)

15. A concave lens has focal length of 15 cm. At what distance should an object be placed from the lens so that it forms an image at 10 cm from the lens? Find the magnification of the lens. (-30cm, 1/3)

Biology (Assignment)

Chapter- Life Processes

Q 1 Bile juice does not contain any digestive enzymes, yet it is essential for digestion, why so? Explain. What is the significance of emulsification of fats?

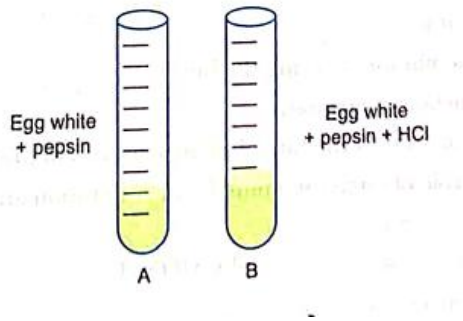
Q 2 Why is the small intestine in herbivores longer than in carnivores?

Q 3 Leaves of a healthy potted plant were coated with Vaseline to block the stomata. Will this plant remain healthy for long? State three reasons for your answers.

Q 4 Name the glands associated with digestion of starch in human digestive tract and mention their role.

Q 5 How is the required pH maintained in the stomach and small intestine?

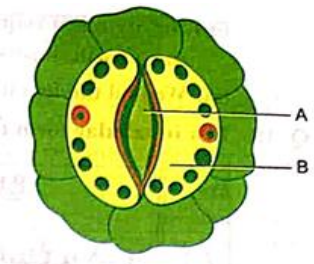
Q 6 A student sets up an experiment to study the role of enzymes in digestion of food in which test tube the digestion of protein will occur and why?



Q 7 If one holds his breath after expiration for about 30 seconds. Would there still be any exchange of respiratory gases in the lungs during the period? Explain.

Q 8 Mention the components of the transport system in highly organized plants. State the functions of these components.

Q9. Study the given diagram name the parts A and B and state one function of each

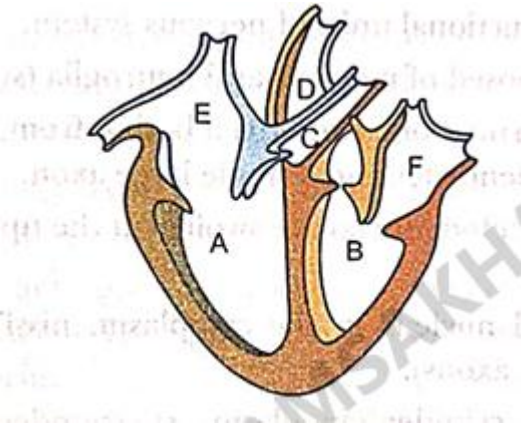


Q10. Explain the mode of nutrition in fungi like bread mould, yeast and mushrooms.

Q11. What makes the R.B.Cs red and what is its function?

Q12. Explain the structure of nephron with the help of a labeled diagram.

Q13. i) Identify any two parts from the diagram which carry oxygenated and deoxygenated blood
ii) explain the process of double circulation with the help of a flowchart



Q14. Write down the differences between
i) Blood and lymph?
ii) Respiration and photosynthesis?

Q15. Set up an experiment to prove that chlorophyll is necessary for photosynthesis. Write down the precautions required.

Q16. What is glycolysis? How will you prove that CO_2 is produced during alcoholic fermentation?

CHEMISTRY (Assignment)

CH 1-Chemical reactions and equations

Q1. Two grams of ferrous sulphate crystals are heated in a dry boiling tube.

1. **Explain two observations.**
2. **Name the type of chemical reaction taking place.**
3. **Write a balanced chemical equation for the reaction and name the products formed.**

Q2. Why do we store silver chloride in dark-coloured bottles?

Q3. Give one example of each chemical reaction involving

a. **Evolution of gas**
b. **Change in color**
c. **Change in temperature**

Q4. A silver article commonly turns black when kept in the open for a few days. The article, if rubbed with toothpaste, again starts shining.

(a) Why do silver articles turn black when retained in the open for a few days? Name the phenomenon involved.

(b) Name the black substance developed and give its chemical formula.

Q5. Zinc liberates hydrogen gas when reacted with dilute hydrochloric acid, whereas copper does not. Explain why?

Q6. On adding a drop of barium chloride solution to an aqueous solution of sodium sulphite, a white ppt is obtained.

(i) Write balanced chemical equations of the reaction involved?

(ii) What other name can be provided for this precipitation reaction?

(iii) On combined dilute hydrochloric acid HCl to the reaction mixture, white ppt disappears. Why?

Q7. On heating blue colored powder of copper nitrate in a boiling tube, copper oxide, oxygen gas, and a brown gas X are formed.

a. Write a balanced chemical equation of the reaction.

b. Identify the brown gas X evolved.

c. Identify the type of reaction.

Q8. Identify the oxidizing agent (oxidant) in the following reactions:

a. $Pb_3O_4 + 8HCl \rightarrow 3PbCl_2 + Cl_2 + 4H_2O$ **b.** $Mg + 2H_2O \rightarrow Mg(OH)_2 + H_2$

c. $CuSO_4 + Zn \rightarrow Cu + ZnSO_4$ **d.** $V_2O_5 + 5Ca \rightarrow 2V + 5CaO$

Q9. Identify the reducing agent in the following reactions:

a. $4NH_3 + 5O_2 \rightarrow 4NO + 6H_2O$ **b.** $H_2O + F_2 \rightarrow HF + HOF$

c. $Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$ **d.** $2H_2 + O_2 \rightarrow 2H_2O$

Q10. A compound 'A' is used in the manufacture of cement. When dissolved in water, it evolves a large amount of heat and forms compound 'B'.
(i) Identify A and B.
(ii) Write chemical equation for the reaction of A with water.
(iii) List two types of reaction in which this reaction may be classified.

Q11. 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.

Q12. Take 3 g of barium hydroxide in a test tube, now add about 2 g of ammonium chloride and mix the contents with the help of a glass rod. Now touch the test tube from outside.
(i) What do you feel on touching the test tube?
(ii) State the inference about the type of reaction occurred.
(iii) Write the balanced chemical equation of the reaction involved.

Q13. 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

Q14. "We need to balance a skeltal chemical equation." Give reason to justify the statement.