Class - X
Periodic Assessment-I
(2022-23)
Science

Date : 23 May 2022
Time: 1hr 45min

Roll No.:....7....
M.M : 40

1. A silver article generally turns black when kept in open for few days. Why? (1)

2. Why is a reaction between lead nitrate and potassium iodide also called precipitation reaction? (1)

3. How will you identify the evolution of the following gases? (1)
(i) CO_2
(ii) H_2 Burnt

4. Write two characteristics of the image formed by a plane mirror. What is the focal length of a plane mirror? (1)

5. What is the nature of the image formed by a concave mirror if the magnification produced by the mirror is +3? (1)

6. Why is nutrition necessary for an organism? (1)

7. What will happen if the leaves of a healthy potted plant were coated with vaseline? (1)

8. Name the digestive juice which does not contain any enzyme but is very important for the process of digestion. Explain why. (2)

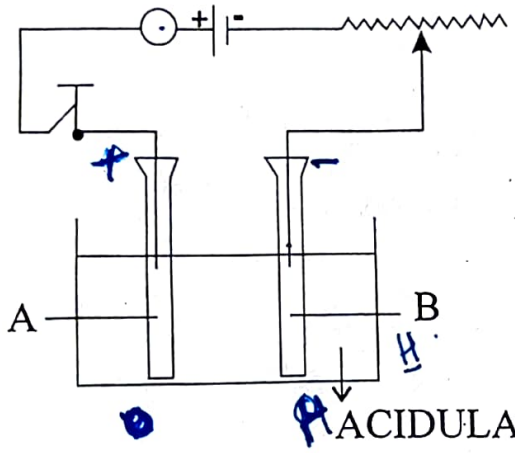
9. A brown substance 'X' on heating in air forms a substance 'Y' .When hydrogen gas is passed over heated 'Y',it again changes back into 'X'. (2)

(i) Name the substance X and Y

(ii) Write a balanced chemical equation for the reaction.

10. What happens when a piece of aluminium metal is added to dilute hydrochloric acid? Write a balanced chemical equation of the reaction. (2)

11. Observe the figure given below carefully and answer the following questions (2)



(i) Label the parts A and B

(ii) Why is the amount of gas collected in one of the test tubes double the amount collected in other?

12. Draw the ray diagram in each case to show the position and nature of the image formed when the object is placed: (2)

(i) at the centre of curvature of a concave mirror.

(ii) between the pole P and focus F of a concave mirror.

3. (a) Size of image of an object by a mirror having a focal length of 20 cm is observed to be reduced to 1/3rd of its size. At what distance the object has been placed from the mirror? What is the nature of the image and the mirror? (2)

(b) Discuss which type of mirror is used in the following with an appropriate ray diagram :

(i) Rear view mirror in vehicles

(ii) Shaving mirror

(iii) Solar cooker (3)

14. (a) Name the reducing agent and the oxidizing agent in the following reaction (2+1+2)

$MnO_2 + Al \longrightarrow Mn + Al_2O_3$

(b) Balance the above equation.

(c) State which is more reactive, Mn or Al and why?

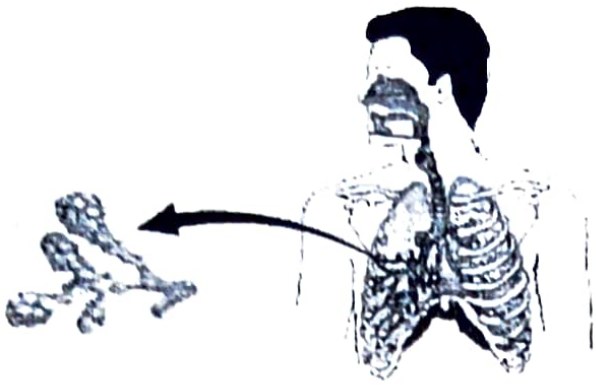
15. (a) Explain the process of nutrition in amoeba with the help of a well labelled diagram. (3)

(b) Explain the digestion of protein in the human digestive system. (2)

16. Read the following information and answer the questions that follow. (4)

We need energy to perform various activities. This energy is derived from the catabolism of various components of food, e.g., proteins, carbohydrates, fats, etc. Oxygen is required for catabolic processes and carbon dioxide is released in the process. So, the body requires a continuous exchange of gases, oxygen from the atmosphere is taken inside and carbon dioxide produced is given out. In human beings,

respiratory pigment called haemoglobin present in RBCs has very high affinity for oxygen. In tissues, exchange of gases occurs between the oxygenated blood and tissue cells.



Name the following part(s) of the human respiratory system that :

(i) are the actual sites of respiratory gas exchange. alveoli

(ii) is the common passage for air and food. Mouth

(iii) is provided with incomplete cartilaginous rings.

(iv) relaxes and gets back to its original shape during expiration.

17. Read the following information and answer the questions that follow. (4)

The spherical mirror forms different types of images when the object is placed at different locations. When the image is formed on the screen, the image is real and when the image does not form on the screen, the image is virtual. When the two reflected rays meet actually, the image is real and when they appear to meet, the image is virtual.

A concave mirror always forms a real and inverted image for different positions of the object. But if the object is placed

between the focus and pole, the image formed is virtual and erect.

A convex mirror always forms a virtual, erect and diminished image. A concave mirror is used as a doctor's head mirror to focus light on body parts like eyes, ears, nose etc., to be examined because it can form an erect and magnified image of the object. The convex mirror is used as a rear view mirrors in automobiles because it can form a small and erect image of an object.

(i) When an object is placed at the centre of curvature of a concave mirror, the image formed is____.

(a) larger than the object

(b) smaller than the object

(c) same size as that of the object

(d) highly enlarged

(ii) No matter how far you stand from a mirror, your image appears erect. The mirror is likely to be_____.

(a) plane

(b) concave

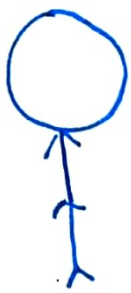
(c) convex

(d) either plane or convex.

(iii) A child is standing in front of a magic mirror. She finds the image of her head bigger, the middle portion of her body of the same size and that of the legs smaller. The following is the order of combinations for the magic mirror from the top.

(a) Plane, Convex and Concave

(b) Convex, Concave and Plane



Plane.

(c) Concave, Plane and Convex

(d) Convex, Plane and Concave

(iv) To get an image larger than the object, one can use___.

(a) convex mirror but not a concave mirror

(b) a concave mirror but not a convex mirror

(c) either a convex mirror or a concave mirror

(d) a plane mirror