

ATOMIC ENERGY CENTRAL SCHOOL-2, MUMBAI

PERIODIC TEST-1: 2023-24

Class: X
Subject: SCIENCE

Time: 1 ½ Hrs
Max Marks: 40

General Instructions:

- This question paper consists of 20 questions. All questions are compulsory.
- It has Four Sections - Section A, Section B, Section C and Section D.
- Section A: It has 10 Questions, Q. No 1 to 10, each carrying ONE mark.
- Section B: It has 4 Questions, Q. No 11 to 14, each carrying TWO marks.
- Section C: It has 4 Questions, Q.No. 15 to 18, each carrying THREE marks.
- Section D: It has 2 Case Study Questions, Q. No 19 and 20, each carrying FIVE marks.
- Draw neat and labelled diagram wherever necessary.

Section – A

(1M x 10=10M)

- The reaction in which two compounds exchange their ions to form two new compounds is called:
(a) Displacement reaction (b) combination reaction
(c) double displacement reaction (d) redox reaction.
- Calcium oxide reacts vigorously with water to produce slaked lime.
 $\text{CaO(S)} + \text{H}_2\text{O(l)} \rightarrow \text{Ca(OH)}_2$
This reaction can be classified as :
(A) A combination reaction (B) exothermic reaction (C) endothermic reaction (D) oxidation reaction!
which of the following is a correct option?
(a) A and C (b) C and D (c) A, C and D (d) A and B
- An object is placed in front of a convex mirror. Its image is formed :
a) at a distance equal to the object distance in front of the mirror.
b) at twice the distance of the object in front of the mirror.
c) half the distance of the object in front of the mirror.
d) behind the mirror between pole and focus.
- A student conducts an activity using a concave mirror with focal length of 10 cm. He placed the object 15 cm from the mirror. Where is the image likely to form?
(a) at 6 cm behind the mirror (b) at 30 cm behind the mirror
(c) at 6 cm in front of the mirror (d) at 30 cm in front of the mirror
- Choose the event that does not occur in photosynthesis?
(a) Absorption of energy by chlorophyll (b) reduction of carbon dioxide to carbohydrates
(b) oxidation of carbon to carbon dioxide (d) conversion of light energy to chemical energy.
- The part of the alimentary canal receives bile from liver is:
(a) Stomach (b) small intestine (c) large intestine (d) oesophagus
- A plant gets rid of excess of water through transpiration. Which is the method used by plants to get rid of solid waste products?
(a) Dropping down of fruits (b) expansion of roots into the soil
(c) shedding of yellow leaves (d) shortening of stem.

Directions: Q. No: 8, 9 & 10 consists of two statements – Assertion and Reason.

Answer the following by selecting an appropriate option from below:

- Both Assertion & reason are true, and the reason is the correct explanation of the assertion.
 - Both Assertion & reason are true, but the reason is not the correct explanation of the assertion.
 - Assertion is true, but the reason is false.
 - Assertion is false, but the reason is true.
8. **Assertion:** Decomposition of vegetable matter into compost is an example of an exothermic reaction.
Reason: Exothermic reactions are those reactions in which heat is absorbed.

9. **Assertion:** The emergent ray is parallel to the direction of the incident ray.
Reason: The extent of bending of the ray of light at the opposite parallel faces (air- glass interface and glass-air interface) of the rectangular glass slab is equal and opposite.
10. **Assertion:** The walls of the ventricle are thicker than the walls of the auricles.
Reason: The ventricles have to pump blood to long distances and various organs.

Section – B

(2M X 4= 8M)

11. Draw ray diagrams showing the image formation by a concave mirror when an object is placed
 (a) Between focus and twice the focal length of the mirror (b) between Pole and focus of the mirror.
12. Write the balanced chemical equation for the following word equations:
 (i) Hydrogen + Chlorine-----Hydrogen chloride
 (ii) Barium chloride (aq) + Sodium Sulphate(aq) -----Barium sulphate(aq) + Sodium chloride(aq)
13. What will happen, when Silver chloride is kept in sunlight? Write the chemical equation for the reaction taking place.
14. A student was observing the temporary mount of a leaf peel under a microscope. Draw a labelled diagram of the structure as seen by him under the microscope.

Section- C

(3M X 4=12M)

15. An object 4cm in size is placed at 25cm in front of a concave mirror of focal length 15cm. At what distance from the mirror should a screen be placed in order to obtain a sharp image? Find the nature and size of the image
16. What is Rancidity? Give any two methods to prevent rancidity.
17. 1 g of copper powder was taken in a china dish and heated. What change takes place on heating? When hydrogen gas is passed over this heated substance, a visible change is seen in it. Give the chemical equation of the reaction, the name and the colour of the product formed in each case.
18. Which are the 3 pathways of conversion of glucose into energy? Explain.

Section – D

(5M x 2 = 10M)

This section has two case study-based questions (19 and 20) . Each case study is followed by sub-questions (a, b, c & d)

19. You might have observed a pencil partly immersed in water in a glass tumbler appears to be displaced at the interface of air and water. This observation indicate that light does not travel in the same direction in all media. Consider a glass slab made of a material of refractive index n_1 kept in a medium of refractive index n_2 . A light ray is incident on the slab.
- (a) What do you mean by refraction of light? (1)
 (b) With the help of a diagram complete the path of rays of light emerging from the glass slab, if
 (i) $n_1 > n_2$ (ii) $n_1 = n_2$ (2)
 (c) Define absolute refractive index of a medium (1)
 (d) State Snell's law of refraction (1)
20. The force exerted by the blood against the wall of vessel is called blood pressure. This pressure is much greater in arteries than in vein. The pressure of blood inside the artery during ventricular systole (contraction) is called systolic pressure and pressure in the artery during ventricular diastole (relaxation) is called diastolic pressure. The normal systolic pressure is about 120 mm of mercury and diastolic pressure is 80 mm of mercury.
- (a) Name the instrument used to measure blood pressure. (1 M)
 (b) Write any two differences between an artery and a vein. (2 M)
 (c) What is the cause of hypertension? (1 M)
 (d) Name the artery which carries blood from heart to lungs. (1 M)