

DAV PUBLIC SCHOOLS, BHUBANESWAR

PERIODIC ASSESSMENT -I (2022-23)

- Check that this question paper contains **5** printed pages.
- Check that the question paper contains **17** questions.
- Write down the Serial Number of the question in the left side of the margin before attempting it.
- 15minute time has been allotted to read this question paper. The question paper will be distributed 15 minutes prior to the commencement of the examination. The students will read the question paper only and will not write any answer on the script during this period.

CLASS-X SUB: SCIENCE

Time Allowed: 1½ Hours

Maximum Marks : 40

General Instructions :

1. All questions are compulsory.
2. Section–A - question no. 1 to 9 - all questions and parts thereof are of one mark each.
3. Section–B - question no 10 to 12 are short answer type questions, carrying 2 marks each. Answers to these questions should in the range of 30 to 50 words.
4. Section–C - question no 13 to 15 are short answer type questions, carrying 3 marks each. Answers to these questions should in the range of 50 to 80 words.
5. Section–D - question no 16 & 17 are long answer type questions carrying 5 marks each. Answer to these questions should be in the range of 80 to 120 words.

SECTION-A

- Q1.** State Snell's law of refraction . (1)
- Q2.** The refractive indices of two media A and B are 1.5 and 1.75 respectively. Find the refractive index of medium B with respect to A. (1)
- Q3.** In an experiment with a rectangular glass slab, a student observed that a ray of light is incident at an angle of 40° with the refracting surface of the glass slab and after refraction strikes the opposite face of the glass slab and before emerging out into air the ray makes an angle of 40° with the normal . Find the values of (1)
- (a) Angle of refraction (r)
 - (b) Angle of emergence (e)

Q4. Write an example of a chemical reaction which is double displacement as well as precipitation. (1)

Q5. A metal compound 'A' reacts with dilute HCl to produce effervescence. The gas evolved which turns lime water milky. Write a balanced equation for the reaction if one of the compounds formed is calcium chloride. (1)

For question numbers **6** and **7** two statements are given-one labeled as **Assertion (A)** and the other labeled as **Reason (R)**. Select the correct answers to these questions from the codes (a), (b), (c) and (d) as given below:

(a) Both A and R are true, and R is the correct explanation of the assertion.

(b) Both A and R are true, but R is not the correct explanation of the assertion.

(c) A is true and R is false.

(d) A is false but R is true.

Q6. Assertion: An object is placed at a distance of f cm from a convex mirror of focal length f (cm) and its image is formed at infinity. (1)

Reason: In case of a convex mirror the distance between the image and the mirror can never be infinity.

Q7. Assertion: After white washing the walls, a shiny white finish on the walls is obtained after 2-3 days.

Reason: Calcium oxide reacts with carbon dioxide to form calcium hydrogen carbonate which gives shiny white finish. (1)

Q8. Read the following and answer the questions from 8(i) to 8(v). (1x4=4)

The lenses form different types of images when the object is placed at different locations. As the object is brought closer to the convex lens from infinity to focus, the image moves away from the focus to infinity. Also the size of the image increases. A concave lens always gives a virtual and diminished image irrespective of the position of the object.

8(i) The image formed by two optical devices are real and diminished. These optical devices are:

(a) concave mirror and convex lens

(b) concave mirror and concave lens

(c) convex mirror and convex lens

(d) convex mirror and concave lens

8(ii) If the object is placed at the focus of a concave lens, then the image would be formed

(a) at infinity.

(b) between focus and centre of curvature, on the same side.

(c) between focus and optical centre, on the same side.

(d) beyond centre of curvature and on the other side.

8(iii) If the power of the lenses L_1 and L_2 are in the ratio 2:1, then the ratio of the focal lengths of L_1 and L_2 will be :

- (a) 2:1 (b) 1:2 (c) 4:1 (d) 1:4

8(iv) The magnification (m) produced by convex lens when an object is placed between the optical centre and focus is:

- (a) $m = +1$ (b) $m = -1$ (c) $m > +1$ (d) $m > -1$

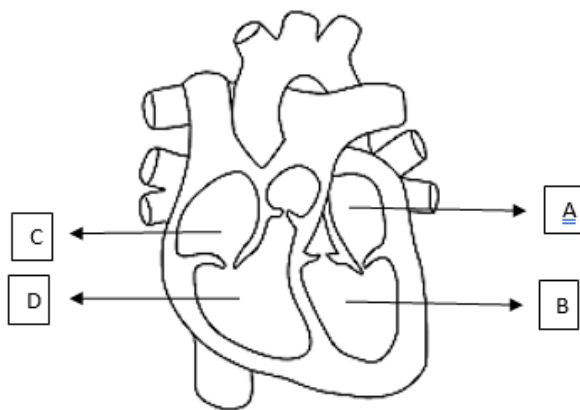
8(v) In which of the following will the image of an object placed at infinity be highly diminished and point sized?

- (a) Concave mirror only
(b) Convex mirror only
(c) Convex lens only
(d) Concave mirror, convex mirror, concave lens and convex lens

Q9. Read the following passage and answer the Questions from 9(i) to 9(v).

(1x4=4)

Blood from the lungs comes to the upper left chamber A. When A contracts, blood enters the next chamber B. When B contracts, blood is pumped out through aorta. From the body parts the deoxygenated blood reaches the upper right chamber C. When C contracts, lower chamber D dilates.



9(i) The chambers of human heart where oxygenated blood flows are

- (a) A and B (b) A and C
(c) C and B (d) C and D

9(ii) Prevention of backflow of blood inside the heart occurs due to

- (a) Thick muscular walls of ventricles
(b) Thin walls of atria
(c) Valves in the heart
(d) All of the above

- 9(iii)** The blood leaving the tissues becomes richer in
- (a) Oxygen (b) Carbon Dioxide
(c) Haemoglobin (d) Water
- 9(iv)** In which of the following group of vertebrates, heart does not pump oxygenated blood to different parts of the body?
- (a) Pisces and Amphibians (b) Amphibians and Reptiles
(c) Amphibians only (d) Pisces only
- 9(v)** Identify the correct route of blood flow in human being.
- (a) A → B → LUNGS → C → D
(b) A → B → D → C → LUNGS
(c) C → D → B → A → LUNGS
(d) C → D → LUNGS → A → B

SECTION- B

- Q10.** A student has focused the image of a candle flame on a white screen using a concave mirror of focal length 12cm. (2)
- (a) Find the distance between the mirror and the screen if the candle flame is at a distance of 18 cm in front of the mirror.
- (b) If the distance between the mirror and the flame is reduced to 10cm (in the above case), then what would be observed on the screen?
- Q11.** Mention the chemical nature of metallic oxides. Acidic or basic? Justify your answer with a suitable reaction. (2)
- Q12.** Mention any two differences between xylem and phloem, mentioning the pathway and the material they transport. (2)

SECTION-C

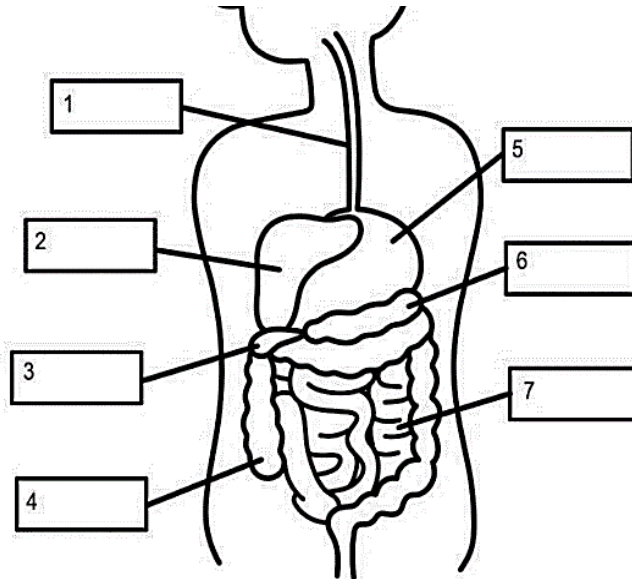
- Q13.** A person can not read the newspaper clearly placed nearer than 50cm from his eyes. (3)
- (a) Name the defect of vision he is suffering from.
- (b) List its two possible causes of this defect.
- (c) Draw the ray diagram to show how this defect may be corrected by using an appropriate lens.
- Q14.** Write the chemical equations for the following reactions. (3)
- (a) Magnesium wire is burnt in air.
- (b) Zinc reacts with dilute sulphuric acid.
- (c) Sodium chloride solution is added to silver nitrate solution.

- Q15.** Give reason: (3)
- Trachea does not collapse even in the absence of air.
 - Rate of breathing is much faster in aquatic organisms than in terrestrial organisms.
 - Sometimes we get muscle cramp while doing sudden activity.

SECTION –D

- Q16.** (a) Define decomposition reaction. Give one example in the form of chemical equation. (5)
- (b) Iron fillings are added to copper sulphate solution.
- Write the balanced chemical equation for the above reaction and chemical name of the products formed.
 - Identify the type of reaction that takes place.
 - List any two important observations of this reaction.

Q17.



- In the above figure, label the structures 5, 6 and 7. (5)
- State the end products of carbohydrate, fat and protein digestion.
- Label 2 does not secrete any enzymes but essential for digestion. Do you agree? Justify.
- Name any two parts of digestive tract, where no digestion occurs.