**O.P. JINDAL SCHOOL, SAVITRI NAGAR**

**PERIODIC TEST –I (Round-2) (2026-27)**

**CLASS-X** **MAX.MARKS-20**

**SUBJECT-SCIENCE** **MAX.TIME-1 Hour**

**General Instruction:-**

(i)All questions are compulsory .There are 12 questions in this question paper with some internal choice in section B and C.

(ii) **SECTION –A:** Question numbers 1 to 6 is MCQs, carrying 1 mark each.

(iii) **SECTION –B:** Question numbers 7 to 10 are short answer questions carrying 2 marks each.

(iv) **SECTION –C:** Question numbers 11 and 12 are long questions carrying 3 marks each.

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## SECTION A

**Q1**. The speed of light in a given medium if angle of incidence in air is $60^O$ and angle of refraction in the medium is $30^O$ (speed of light in air = $3\times 10^8 ms^{-1}$) is (1M)

(a) $2\sqrt{3}\times10^8 ms^{-1}$ (b) $4\sqrt{3}\times10^8 ms^{-1}$

(c) $3\sqrt{3}\times10^8 ms^{-1}$ (d)$\sqrt{3}\times10^8 ms^{-1}$

**Q2.**Calcium phosphate is present in tooth enamel. Its nature is (1M)

(a)Acidic (b)Basic

(c)Neutral (d)Amphoteric

**Q3.** The backflow of blood during the pumping of blood by heart is prevented by: (1M)

(a) Walls of ventricles

(b) Walls of the atrium

(c) Valves in the heart

(d) Walls between atria and ventricles

**Q4.** A person sees an object closer to his eyes. What changes will take place in his eyes?(1M)

(a)The pupil size will expand

(b) The ciliary muscles will contract

(c)The focal length of the eye lens will increase

(d) The light entering the eye will be more

**Q5.**You are having five solutions ; A,B,C,D and E with pH values as follows:

A=1.8 ,B=7 ,C=8.5,D=8 and E=5.Which solution would be most likely to liberate hydrogen with magnesium powder? (1M)

(a)Solution A and B (b)Solution A

(c)Solution C (d)Solution C and D

**Q6.**Name the substances whose build up in the muscles during vigorous physical exercise may cause cramps? (1M)

(a) Ethanol + Carbon dioxide + Energy (b) Lactic acid + Energy

(c) Carbon dioxide + Water + Energy (d) Pyruvate

## SECTION B

**Q7. Attempt either (A) or (B)**

**(A):** (2M)

(i)Calculate the power of lens when an object is at least distance of clear vision for a healthy eye?

(ii)Arrange these colours of visible light- green , red and blue in increasing order of

(a) wavelength

(b) Refractive index

OR

**(B):**

(i) Define the term principal foci of convex lens and show with help of proper diagram.

(ii) The power of a combination of two lenses in contact is +1.0 D. If the focal length of one of the lenses of the combination is +20.0 cm, then find the focal length of the other lens?

**Q8.**A white powder is used by doctors to support fractured bones. (2M)

(i)Write the name and chemical formula of the powder.

(ii)How is this powder prepared?

**Q9.**(i)Why does dry HCl gas not change the colour of dry litmus paper? (2M)

(ii)How is the concentration of hydronium ion $H_3O^+$ affected when a solution of an acid is diluted?

**Q10. Attempt either (A) or (B):** (2M)

**(A):**

(i)Why is the breathing rate in aquatic organism much faster than in terrestrial organism?

(ii)What are the differences between the transportation of materials between xylem and phloem?

OR

**(B):**

Give reasons:

(i)Ventricles have thicker muscular walls than atria.

(ii)Veins have valves whereas arteries do not.

## SECTION C

**Q11.Attempt either (A) or (B):** (3M)

**(A):**

(i)Draw a flow chart showing the three different pathways involved in the breakdown of glucose in different organisms.

(ii)State the function of rings of cartilage present in our throat.

OR

**(B):**

Describe the structure and function of the excretory unit in humans.

**Q12.** A student of class X placed the object in front of a convex lens at different distance from it and recorded the image distance as per the given data in the following table. (3M)

| Sl no. | Object distance 'u' in cm | Image distance 'v' in cm |
|---|---|---|
| 1 | −60 | +12 |
| 2 | −30 | +15 |
| 3 | −20 | +20 |
| 4 | −15 | +30 |
| 5 | −12 | +60 |
| 6 | −9 | +90 |

Read the above paragraph and answer the following questions.

(i) Find the focal length of the convex lens.

(ii) At which of the position of the object from the lens, image formed by the above convex lens will be real, inverted and magnified.

(iii) Can a convex lens can be used a magnifying glass? State the reason.

**OR**

State the reasons for myopia. With the help of a ray diagram, show the :

(i) Image formation by myopic eye, and

(ii) Correction of myopic eye by using an appropriate lens.

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