Carmel Convent School, Chandigarh
Periodic Test II Session 2025-26
Science

Class: X **Total marks: 80**
Date: 18. 09. 25 **Time: 3 hr.**

Biology (27)

General Instructions

i. This question paper consists of 15 questions in 5 sections.

ii. All questions are compulsory. However, an internal choice maybe provided in some questions. A student is expected to attempt only one of these questions.

iii. Section A consists of 5 objective type questions carrying 1 mark each.

iv. Section B consists of 2 Very Short questions carrying 02 marks each.

v. Section C consists of 3 Short Answer type questions carrying 03 marks each.

vi. Section D consists of 1 Long Answer type questions carrying 05 marks each.

vii. Section E consists of source-based/case-based units of assessment of 04 marks.

Section A

MCQs

1. Reflex arc ends at
   a. Receptor
   b. Effector
   c. Nerves
   d. muscles
2. Which plant hormone promotes cell division?
   a. Auxin
   b. Gibberellin
   c. Cytokinins
   d. Abscisic acid
3. Which part of nephron allows the active transportation/ secretion of nitrogenous wastes?
   a. Tubule
   b. Glomerulus
   c. Bowman's capsule
   d. Ureter
4. Carrying digested and absorbed fat from intestine to the blood is the function of
   a. Villi
   b. Intestinal enzymes
   c. Lymph
   d. Liver
5. **ASSERTION AND REASONING**

DIRECTION: In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

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

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

C. Assertion (A) is true, but reason (R) is false.

D. Assertion (A) is false, but reason (R) is true.

Assertion: Transpirational pull is an important factor responsible for Ascent of sap during the day.

Reason: Root Pressure is an important factor responsible for Ascent of sap during the night.

Section B

6. What are the end products of digestion in humans?
7. Why is there a residual volume of air in the lungs?

Section C

8. What are the three basic events during Photosynthesis?
9. Draw a neat diagram of the human heart and label the part
   a. Which carries deoxygenated blood to the lungs
   b. Which prevents backflow of blood into the left ventricle.
   c. Which carries oxygenated blood to the body.

Or

Draw a flow diagram to show the path of a reflex action when a person touches a hot object suddenly.

10. Fill in the blanks:

Gland	Hormone	Function
Pancreas	a.	b.
c.	TSH	d.
e.	f.	regulates carbohydrate, protein and fat metabolism in the body

Section D

11. Give a term for the following:
    a. Rhythmic movement of the walls of the alimentary canal to push the food forward
    b. Fundamental unit of excretion

c. The mechanism in a living organism, to maintain the levels of hormones in the body in the desired limits by triggering increase or decrease of the levels of the hormone

d. Transfer of electric chemical signals along the neurons.

e. Change in the environment of a living organism.

Section E: Case Study based Question

Animals have evolved different organs for the uptake of oxygen from the environment and for getting rid of the carbon dioxide produced. We have seen that plants exchange gases through stomata. Carbon dioxide and oxygen are exchanged by diffusion here. They can go into cells, or away from them and out into the air. When the body size of animals is large, the diffusion pressure alone cannot take care of oxygen delivery to all parts of the body. Instead, respiratory pigments take up oxygen from the air in the lungs and carry it to tissues which are deficient in oxygen before releasing it.

Answer the following Questions:

12. What advantage does a terrestrial organism have over an aquatic organism, with regard to obtaining oxygen for respiration?

13. How is oxygen and carbon dioxide transported in human beings?

14. The end products of aerobic & anaerobic glucose breakdown respectively are
(i) Carbon dioxide and water
(II) Ethanol, Carbon dioxide & water
(iii) Lactic acid
(iv) Pyruvate
a. (iv) & (iii)
b. (i) & (ii)
c. (i) & (iv)
d. (ii) & (iii)

15. The covering of the gill slits in fish is called
a. Pleura
b. Fins
c. Operculum
d. Scales

Chemistry (26)

GENERAL INSTRUCTIONS:

a. **Q 1-7 are MCQ's carrying 1 mark each.**
b. **Q 8-9 are short answers carrying 2 marks each.**
c. **Q 10-11 are short answers carrying 3 marks each.**
d. **Q 12 carry 4 marks.**
e. **Q 13 carry 5 marks.**
f. **All questions are compulsory.**

Q1. Which of the following is not a mineral acid

a. hydrochloric acid
b. citric acid
c. sulphuric acid
d. nitric acid

Q2. Sodium carbonate is a basic salt because it is

a. salt of a strong acid and strong base
b. a weak acid and weak base
c. strong acid and weak base
d. the weak acid and strong base

Q3. Common salt besides being used in kitchen can also be used as a raw material for making option

a. washing soda
b. bleaching powder
c. baking soda
d. slaked lime

Q4. Which of the following salts does not contain water of crystallization?

a. Blue vitriol
b. Baking soda
c. Washing soda
d. Gypsum

Q5. Which of the following is the property of ionic compounds?

a. They have high melting and boiling points.
b. They conduct electricity in solution or in a molten state.
c. Both (a) and (b)
d. None of the above.

Q6. Which of the following metals does not react with acid

a. Fe
c. Cu
b. Mg
d. Al

Q7. Silver articles become black on prolonged exposure to air. This is due to formation of

a. Silver Iodide
b. Silver Nitrate
c. Silver sulphide
d. Silver oxide

Q8. Write balance chemical equation for the following:

a. Sodium hydroxide solution is treated with acetic acid to form sodium acetate and water.

b. Thermit reaction

Q9. Define an Ionic bond. Using dot structure show the formation of Na_2O.

Q10. What are amphoteric oxides? Give an example and chemical equation to support your answer.

Q11. White coloured powder is used by doctors for supporting fractured bones.

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

(b) When this white powder is mixed with water a hard solid mass is obtained. Write balanced chemical equation for the same.

Q12. Compound such as alcohols and glucose also contain hydrogen but are not categorized as acids describe an activity to prove it with the diagram. (4mrk)

Q13. (i) Give reasons:

a. Why metals like sodium and potassium are kept under kerosene oil?

b. Why calcium starts floating on water?

(ii) Name the following:

c. Metal that exists in liquid state at room temperature.

d. Most malleable and ductile metal.

e. Non-metal that is lustroous.

PHYSICS

Total Marks: 27

1. A person cannot see distinctly objects kept beyond 2m. This defect can be corrected by using a lens of power:

a) +0.5D b) -0.5D c) +0.2D d) -0.2D (1)

2. The focal length of the eye lens increases when eye muscles:

a) are relaxed and lens becomes thicker

b) contract and lens becomes thicker

c) are relaxed and lens becomes thinner

d) contract and lens becomes thinner (1)

3. You are given water, mustard oil, glycerine and kerosene. In which of these media a ray of light incident obliquely at same angle would bend the most?

a) kerosene b) water c) mustard oil d) glycerine (1)

4. A 10mm long awl pin is placed vertically in front of a concave mirror. A 5mm long image of the awl pin is formed at 30cm in front of the mirror. The focal length of this mirror is:

a) -30 cm b) -20 cm c) -40 cm d) -60 cm (1)

ASSERTION AND REASON

In the following Questions, the Assertion (A) and Reason (R) have been put forward.

Read both the statements carefully and choose the correct alternative from the following:

(a) Both the Assertion and the Reason are correct and the Reason is the correct explanation of the Assertion.
(b) The Assertion and the Reason are correct but the Reason is not the correct explanation of the Assertion.
(c) Assertion is true but the Reason is false.
(d) The statement of the Assertion is false but the Reason is true.

5. Assertion (A): In going from a denser medium to a rarer medium, a ray of light bends away from normal.
Reason (R): This occurs because light travels faster in a rarer medium than in a denser medium. (1)

6. Assertion (A): Refractive index of a medium decreases with the rise in temperature of the medium.
Reason (R): Refractive index of a medium varies directly as the density of medium and density decreases with the rise in temperature. (1)

7. Assertion (A): The colour of the sky is blue due to scattering of light.
Reason (R): Blue colour has shortest wavelength in visible spectrum and hence it is scattered the most. (1)

8. Assertion (A): When a white light beam passes through a glass prism spectrum is obtained.
Reason (R): The different colors have the same speed while passing through the glass prism. (1)

9. What happens to the image distance in the normal human eye when we decrease the distance of an object, say 10m to 1m? Justify your answer. (2)

10. The far point of a myopic person is 150 cm in front of the eye. Calculate the focal length and the power of a lens required to enable him to see distant objects clearly. (2)

11. State Snell's law of refraction of light. Write an expression for the absolute refractive index of a medium in terms of speed of light. (3)

12. A real image 2/3rd of the size of an object is formed by a convex lens when the object is at a distance of 12 cm from it. Find the focal length of the lens. (3)

4.8 cm

13. A student focused the image of a candle flame on a white screen using a convex lens. He noted down the position of the candle, screen and the lens as under:

Position of candle = 12 cm
Position of convex lens = 50 cm
Position of the screen = 88 cm

i) What is the focal length of the lens?
ii) Where will the image be formed if he shifts the candle towards the position of 31cm ?
iii) What will be the nature of the image formed if he shifts the candle towards the lens?
iv) Draw ray diagram to show the formation of the image in case iii) as said above. (5)

14. CASE BASED QUESTION

A student took three concave mirrors of different focal lengths and performed the experiment to see the image formation by placing an object at different distances with these mirrors as shown in the following table:

Case	Object Distance	Focal Length
1	45 cm	20 cm
2	30 cm	15 cm
3	20 cm	30 cm

Now answer the following questions:

a) List two properties of the image formed in case 1

b) In which one of the cases given in the table, the mirror will form real image of same size and why?

c) Name the type of mirror used by dentists. Give reason why do they use such type of mirrors.

Or

Look at the table and identify the situation, which resembles the situation in which concave mirrors are used as shaving mirrors. Draw a ray diagram to show the image formation in this case. (4)

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