

# Kendriya Vidyalaya, BHU Varanasi (FS)

## 2<sup>nd</sup> Periodic Test 2024-25 Class X

### Subject- Science

MM: 60

Duration 2:30 HRS

#### GENERAL INSTRUCTIONS:

The Question Paper contains 3 sections.

- (i) **Section–A** - question no. 1 to 13- all questions and parts are of one mark each. These questions contain multiple choice questions (MCQs), very short answer questions and assertion - reason type questions. Answers to these should be given in one word or one sentence.
- (ii) **Section–B** - question no. 14 to 21 are short answer type questions, carrying 3 marks each. Answers to these questions should in the range of 50 to 80 words.
- (iii) **Section–C** – question no. – 22 to 25 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 (16 Marks)

1. What happens when a solution of an acid is mixed with a solution of a base in a test tube? (i) Temperature of the solution decreases (ii) Temperature of the solution increases (iii) Temperature of the solution remains the same (iv) Salt formation takes place  
a) (i) and (iv)      (b) (i) and (iii)  
(c) (ii) only      (d) (ii) and (iv)
2. Electrical impulse travels in a neuron from  
(a) Dendrite axon → axonal end → cell body  
(b) Cell body → dendrite → axon → axonal end  
(c) Dendrite → cell body → axon → axonal end  
(d) Axonal end → axon → cell body → dendrite
3. Which of the following phenomena of light are involved in the formation of a rainbow?  
(a) Reflection, refraction and dispersion  
(b) Refraction, dispersion and total internal reflection  
(c) Refraction, dispersion and internal reflection  
(d) Dispersion, scattering and total internal reflection
4. An electric iron draws a current 4 A when connected to a 220 V mains. Its resistance must be  
(a) 1000  $\Omega$     (b) 55  $\Omega$     (c) 44  $\Omega$     (d) None of these
5. When hydrogen chloride gas is prepared on a humid day, the gas is usually passed through the guard tube containing calcium chloride. The role of calcium chloride taken in the guard tube is to  
(a) absorb the evolved gas      (b) moisten the gas  
(c) absorb moisture from the gas      (d) absorb  $\text{Cl}^-$  ions from the evolved gas

6. Following question consist of two statements – Assertion (A) and Reason (R).  
Answer the question selecting the appropriate option given below:

- (a) Both A and R are true and R is the correct explanation of A.
- (b) Both A and R are true but R is not the correct explanation of A.
- (c) A is true but R is false.
- (d) A is false but R is true.

**Assertion (A) :** Insulin regulates blood sugar level.

**Reason (R) :** Insufficient secretion of insulin will cause diabetes.

7. Name the plant hormones responsible for
- a. Elongation of cells
  - b. Falling of senescent leaves
8. Name a device that helps to maintain a potential difference across a conductor.
9. List any two observations when Ferrous Sulphate is heated in a dry test tube?
10. The gap between axonal ending and dendrites of another neuron is called.....
11. Why does an aqueous solution of an acid conduct electricity?
12. Find the power of a concave lens of focal length 2 m?
13. Read the following and answer any four questions

All living cells require energy for various activities. This energy is available by the breakdown of simple carbohydrates either using oxygen or without using oxygen.

**(i) Energy in the case of higher plants and animals is obtained by**

- a) Breathing b) cellular respiration c) Organ respiration d) Digestion of food

**(ii) Study the table below and select the row that has the incorrect information**

		<b>Aerobic</b>	<b>Anaerobic</b>
a	<b>Location</b>	Cytoplasm	Mitochondria
b	<b>End Product</b>	CO <sub>2</sub> and H <sub>2</sub> O	Ethanol and CO <sub>2</sub>
c	<b>Amount of ATP</b>	High	Low
d	<b>Oxygen</b>	Needed	Not needed

**(iii). The characteristic processes observed in anaerobic respiration are**

- i) Presence of oxygen ii) release of carbon dioxide  
iii) Release of energy iv) release of lactic acid  
a) i) ,ii) only b) i), ii), iii) only c) ii), iii), iv) only d) iv) only

**(iv). Name the substances that is build up in the muscles during vigorous physical exercise may cause cramps?**

- (a) Ethanol + Carbon dioxide + Energy (b) Lactic acid + Energy  
(c) Carbon dioxide + Water + Energy (d) Pyruvate

### **SECTION B (24 Marks)**

14. Bile juice does not have any digestive enzyme but still plays a significant role in the process of digestion. Justify the statement.
15. Match the following pH values 1, 7, 10, 13 to the solutions given below:

• Milk of magnesia • Gastric juices • Brine • Aqueous Sodium hydroxide

16. A student has difficulty reading the blackboard while sitting in the last row. What could be the defect the child suffering from? How can it be corrected?

17. An object is placed at a distance of 12 cm in front of a concave mirror of radius of curvature 30 cm. List four characteristics of the image formed by the mirror.

18. Write a balanced chemical equation with state symbols for –

a) Solutions of barium chloride and sodium sulphate in water react to give insoluble barium sulphate and the solution of sodium chloride.

b) Zinc granules added to hydrochloric acid.

19. (a) Write the chemical name and formula of marble.

(b) It has been found that marbles of Taj are getting corroded due to development of industrial areas around it. Explain this fact giving a chemical equation.

(c) What happens when  $\text{CO}_2$  is passed through lime water?

20. Mention the type of chemical reaction that takes place when:

(i) a magnesium ribbon is burnt in air.

(ii) Limestone is heated.

(iii) Silver bromide is exposed to sunlight.

(iv) Electricity is passed through acidified water.

(v) Potassium iodide is added to lead nitrate

(vi) Photosynthesis

21. An object 5cm in length is held 25 cm away from a converging lens of focal length 10 cm. Draw the ray diagram and find the position, size and nature of the image formed.

### SECTION C (20 Marks)

22 a. Draw the structure of a neuron and explain its function.

(b) Which part of the human brain is:

(i) the main thinking part of the brain?

(ii) responsible for maintaining the posture and balance of the body?

23. (a) List the factors on which the resistance of a conductor wire depends.

(b) Why are metals good conductors of electricity whereas glass is a bad conductor of electricity ? Give reason.

(c) Why are alloys commonly used in electrical heating devices ?

24. a) List the important products of the Chlor-alkali process. Write one important use of each.

b) What is common name of  $\text{CaOCl}_2$ ?

25. Identify A,B,C,D A and E in the given figure.

