B.K. BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
A CBSE DAY-CUM-BOYS' RESIDENTIAL SCHOOL

TERM-1 (2025-26)

SCIENCE MARKING SCHEME

Class: VII **Time: 3hours**
Date: /09/'25 **Max Marks: 80**

SECTION- A BIOLOGY

Multiple Choice Questions (1 mark each)

1. **(c) oxygen**
2. **(a) small intestine**
3. **(a) Gall bladder**
4. **(a) trachea**
5. **(d) Breath**
6. **(d) All (a), (b) and (c)**
7. **(b) Red blood cells**

Assertion & Reasoning (1 mark each)

8. **Answer: A**

9. **Answer: A**

Short Answer Type (2 marks each)

10. a) **Correct order of holozoic nutrition:**
☞ Ingestion → Absorption → Assimilation → Egestion

b) **Correct order of secretion based on their action:**
Salivary amylase → HCl → Bile → Intestinal juice

11. **(Attempt either A or B)**
A. Breathing is the process of **taking in oxygen** and **giving out carbon dioxide** through the **lungs**.
OR
B. Anaerobic respiration is the **breakdown of food without oxygen**, producing **less energy** and sometimes **alcohol or lactic acid**.

12. a) Haemoglobin helps in **carrying oxygen** from the lungs to all parts of the body.
b) Veins have valves to **prevent the backflow of blood** and ensure it moves **towards the heart**.

Diagram/Observation Based (3 marks)

13. a) Producer: **Plant**; Consumer: **Animal/Human**
    b) Plant – **Autotrophic (makes its own food via photosynthesis)**
    Animal – **Heterotrophic (depends on plants/animals for food)**
    c) Source of energy for the producer: **Sunlight**

14. **Kidneys** – Filter blood and remove urea and other unwanted salts.

    Ureter – Help in transporting the urine from the kidneys to the bladder.

    Urinary bladder– Collects and stores the urine temporarily before excretion

Case-Based Question (4 marks)

(Attempt either A or B)

A. Rohan's Case

1. Eating too much oily/spicy food causes **indigestion**
2. Mainly affects the **stomach**
3. **Bile juice** helps digest fats

or

4. Water helps in **softening food**, **aiding digestion**, and **preventing constipation**

Long Answer / Diagram Based (5 marks)

(Attempt either A or B)

A. Mechanism of Breathing in Fish – Flowchart format

1. Water enters mouth
2. Passes over gills
3. **Oxygen is absorbed** by blood in gills
4. Carbon dioxide is released into water
5. Water exits through gill slits

OR

B. Labelled Diagram (Respiratory System):
Label parts like:

- **Nose**
- **Trachea**
- **Lungs**
- **Diaphragm**
- **Bronchi**

SECTION- B CHEMISTRY

17. (c) Mixture

18. (c) Hydrochloric acid
19. (d) Sodium hydroxide
20. (c) Breaking of glass
21. (d) Crystallisation
22. (d) Boiling of water
    (b) It expands.

24. B. Both A and R are true, and R is not the correct explanation of A.

25.

The order of concentration from the most dilute to the most concentrated is as follows: i. Beaker 2 (25 mL of acid, most dilute) ii. iii. iv. 11 Beaker 1 (50 mL of acid) Beaker 4 (75 mL of acid) Beaker 3 (80 mL of acid, most concentrated) 2M

26. **Attempt either option A or B.** 3

A. Rusting is the corrosion of iron, forming hydrated iron(III) oxide (rust) when iron reacts with oxygen and water. It can be prevented by creating barriers to oxygen and moisture, using protective coatings, or modifying the iron itself.

OR

B. Three common chemical changes observed in daily life are: digestion of food, rusting of iron, and burning of wood. These processes involve the transformation of substances into new materials with different properties. .

27. Acids and bases are chemical opposites, characterized by distinct properties. Acids typically taste sour, turn blue litmus paper red, and react with metals to produce hydrogen gas. Bases, on the other hand, often taste bitter, feel slippery, and turn red litmus paper blue. Both acids and bases can conduct electricity when dissolved in water. The pH scale is used to measure their relative acidity or basicity, with lower numbers indicating acids and higher numbers indicating bases. 3

28. Read the following and answer the questions- 4

(i) HCl
(ii) (d) Carbonates

(iii) If we mix an acid with a base, a chemical reaction will take place and salt and water will be formed. The reaction is called a neutralization reaction.

OR

(iii) The powder that Rakesh mixed in water was an antacid. The antacid contained a mild base. Once he consumed the solution, the base neutralized the excess acid in the stomach, thus providing relief to Rakesh.

29. **Attempt either option A or B.**
5

A. i) A chemical change, also known as a chemical reaction, is a process where one or more substances are transformed into new substances with different chemical compositions and properties.

ii) (a) Combination reaction – It is a chemical reaction in which two or more substances combine to form one product. For example, the reaction of hydrogen and oxygen to form water is a combination reaction. (b) Oxidation reaction – It is the chemical reaction in which a substance reacts with oxygen to form an oxide. For example, the reaction of magnesium and oxygen to form magnesium oxide is an oxidation reaction.

OR

B. i) In burning of oxygen both oxidation and combination reaction is involved. Magnesium reacts with oxygen to form magnesium oxide. Magnesium + Oxygen → Magnesium oxide When white ash is dissolved in water magnesium hydroxide is formed. This is a combination reaction. Magnesium oxide + Water → Magnesium hydroxide.

ii) Crystallisation is the process of obtaining crystals of a substance from its saturated solution. For example, crystals of copper sulphate are obtained by heating a saturated solution of copper sulphate. The solution is then cooled slowly. As the solution cools down, copper sulphate separates out in the form of crystals.

SECTION-C PHYSICS

30. (b)They reflect most of the heat. 1

31. (b) m/s 1

The following question consists of two statements – **Assertion** (A) and **Reason** (R). Answer these questions by 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, and R is not the correct explanation of A.
C. A is true but R is false.
D. A is false but R is true.

32. Assertion is true but reason is false 1

33. 1. Insulators are materials that resist the flow of electricity or heat. They are used to prevent the unwanted transfer of these forms of energy. Two common examples of insulators are rubber and plastic 1+1/2+1/2

34. A. 1. (i) Shortest distance between initial and final position. 1+1

(ii) zero

OR

B.

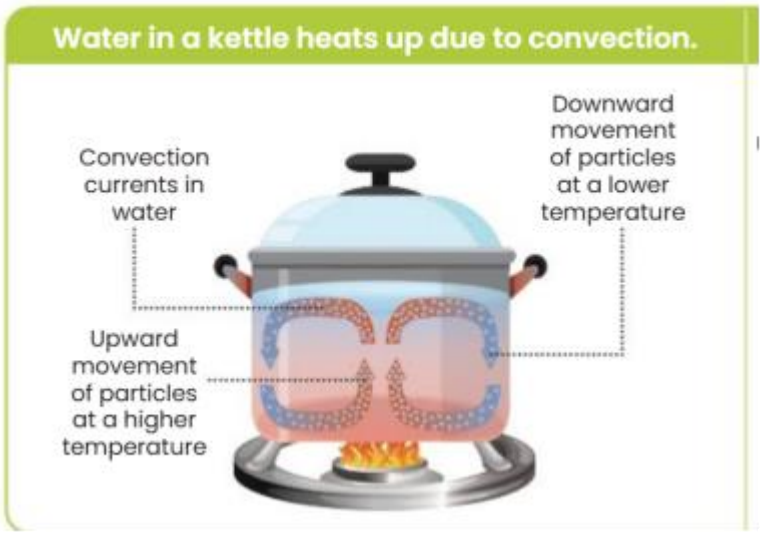
a = v-u/t

u = 0

v = 72 x 5/18 = 20m/s

a = 20- 0/10 = 2 m/s

35.



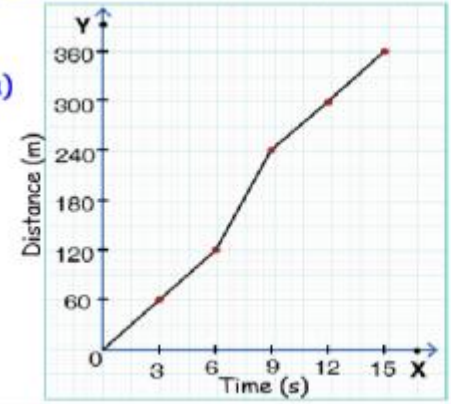
1+1+1

36. This flow of heat continues until both objects reach the same temperature. Once they do, they are said to be in thermal equilibrium, meaning they are at the same temperature.For example, the hot glass of tea will transfer heat to the surrounding air until both the tea and the air reach thermal equilibrium.The SI unit of heat is joule (J).

Tea and the surrounding air at thermal equilibrium

37.

(a)



Scale:
x-axis: 1 cm = 3 s
y-axis: 1 cm = 60 m

38. **Read the passage below and answer the questions:**

A person runs four rounds of a rectangular track. The magnitude of velocity will change if the person slows down or takes a break. Similarly, the direction of velocity will change when the person takes turns along the rectangular path. Therefore, when we speak about the velocity of an object over a period of time and not at a specific instance, we use average velocity.

Average velocity is defined as the ratio of displacement of an object to the total time for which the object showed motion.The direction of average velocity is in the direction of the displacement (from the initial position of the object to its final position). The SI unit of average velocity is the same as that of velocity.

(i) Average velocity is defined as the ratio of displacement of an object to the total time for which the object showed motion. **1**

(ii) The direction of average velocity is in the direction of the displacement (from the initial position of the object to its final position).
1

(iii) 400/20 = 20 m/s **1+1**

Or

40/2 = 20 km/h

39. Attempt either option A or B.

A . Conduction is the process of heat transfer that occurs from an object at a higher temperature to an object at a lower temperature when they are in direct contact with each other.

The particles of the spoon near the flame start to vibrate rapidly when they are heated. These particles bump into the neighbouring particles and transfer energy to them. The neighbouring particles then start vibrating faster and transfer energy to the particles around them, which are closer to the other end of the spoon. Thisrelayof energy continues until the energy is passed to the particles at the other end of the spoon, which are at a lower temperature.

1+1+1+2

OR

B. Heat is the energy transferred from an object at a higher temperature to an object at a lower temperature. SI unit is Joule.

Heat	Temperature
• Heat is the energy transferred from an object at a higher temperature to an object at a lower temperature. • The heat transferred by an object made of a particular substance to its surroundings depends on the amount of the substance in the object. • The SI unit of heat is joule (J).	• Temperature expresses how hot or cold an object is. • The temperature of an object made of a particular substance is not dependent on the amount of the substance in the object. • The SI unit of temperature is kelvin (K).
For example, boiling water in a vessel can transfer more heat to its surroundings than a spoon of boiling water. 	For example, the temperature of boiling water in a spoon is equal to the temperature of boiling water in a vessel.

1+1+1+2

**********ALL THE BEST**********