



Indian School Al Wadi Al Kabir

Midterm Examination (2026-27)

Sub: SCIENCE
SET II

Class: VII
Date: 22/09/2026

Max. Marks: 80
Time: 2 ½ Hours

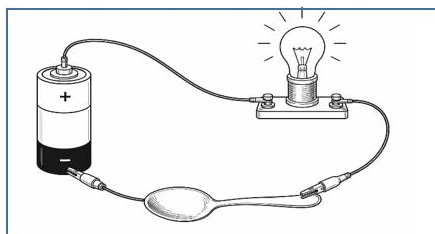
General Instructions:

- i. All questions are compulsory. Marks are indicated against each section.
- ii. The question paper comprises **8 pages** and **39** questions in 5 sections A, B, C, D and E.
- iii. Q 1 to Q 16 in **Section A** - MCQs carry **ONE** mark each. Write the correct answer along with the option in the answer script.
- iv. Q 17 to Q 20 in **Section A** - Assertion and Reason carry **ONE** mark each.
- v. Q 21 to Q 26 in **Section B** are Short Answer Type Questions and carry **TWO** marks each.
- vi. Q 27 to Q 33 in **Section C** are Short Answer Type Questions and carry **THREE** marks each.
- vii. Q 34 to Q 36 in **Section D** are Long Answer Type Questions and carry **FIVE** marks each.
- viii. Q 37 to Q 39 in **Section E** are Case study/Paragraph Questions and carry **FOUR** marks each.
- ix. Write the same question number as given in the question paper.
- x. Correction fluid should not be used in the answer script.
- xi. Diagrams should be drawn using a pencil.

SECTION A (1X20=20)

- 1 A student observes a paper plane flying and wonders about the scientific reason behind its flight. Which quality of a scientist is the student demonstrating? 1
- (a) Memorising facts.
(b) Curiosity and questioning.
(c) Avoiding experiments.
(d) Copying observations

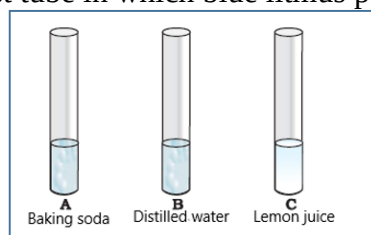
- 2 1



What property of materials can be investigated using the setup shown above?

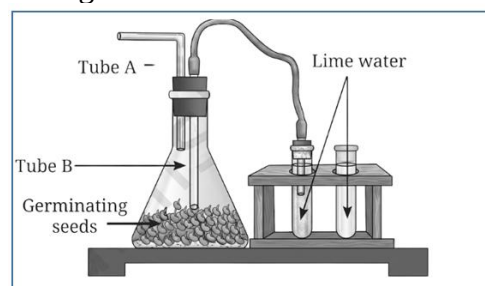
- (a) Solubility
(b) Hardness
(c) Electrical conductivity
(d) Transparency

- 3 Tanvi has three solutions: lemon juice, sugar solution and soap solution. Without tasting them, she tests them with an indicator. Which observation would help her identify the basic solution? 1
- (a) It changes blue litmus to red.
(b) It changes red litmus to blue.
(c) It shows no characteristic colour change with litmus.
(d) It turns turmeric reddish-brown.
- 4 Rahul adds a few drops of turmeric solution to two colourless liquids. In liquid P, the turmeric remains yellow, while in liquid Q, it turns red. Which conclusion is most appropriate? 1
- (a) P is acidic, and Q is basic.
(b) P is basic, and Q is acidic.
(c) P is neutral, and Q is acidic.
(d) Both P and Q are neutral.
- 5 A student mixes two substances in a beaker and observes a colour change. What should the student do next to investigate the observation scientifically? 1
- (a) Record the observation and repeat the experiment.
(b) Immediately conclude what happened.
(c) Ignore the observation.
(d) Change all the materials at once.
- 6 Three test tubes with solutions were taken as shown in the figure given below. Red and blue litmus papers were dipped in all three test tubes to test the nature of the solutions. Identify the test tube in which blue litmus paper shows a colour change. 1



- (a) Test tube A, as the solution is a base.
(b) Test tube B, as the solution is neutral.
(c) Test tube C, as the solution is an acid.
(d) Both test tubes A and B, as they are neutral
- 7 A gardener adds equal amounts of water to three fields containing **gravel, sand, and clay**, respectively. After some time, he notices that water has penetrated deepest into the gravel field, while only a small amount has passed through the clay field. What is the most likely explanation for this observation? 1
- (a) Gravel absorbs more water than clay.
(b) Gravel has larger, well-connected spaces that allow water to pass through easily.
(c) Clay contains more water than gravel.
(d) Sand and clay do not have spaces between their particles.

- 8 The swallowed food moves downwards in the alimentary canal because of: 1
(a) Force provided by the muscular tongue.
(b) The water taken along with the food.
(c) Gravitational pull.
(d) The contraction of muscles in the wall of the food pipe.
- 9 Which of the following represents the correct sequence of processes in the water cycle? 1
(a) Condensation → Precipitation → Evaporation → Cloud formation
(b) Evaporation → Condensation → Cloud formation → Precipitation
(c) Cloud formation → Evaporation → Precipitation → Condensation
(d) Evaporation → Precipitation → Condensation → Cloud formation
- 10 Rohan lights an incense stick and places it inside a glass container with an opening at the top. After a few seconds, he observes the smoke rising towards the opening. What does this observation indicate about the movement of air inside the container? 1
(a) It is colder and denser than the surrounding air.
(b) It is hotter and less dense than the surrounding air.
(c) It is colder and less dense than the surrounding air.
(d) It is heavier because it contains solid particles.
- 11 A child consumes a meal containing carbohydrates, proteins, and fats. Which sequence correctly describes the changes these food components undergo during digestion? 1
(a) They are digested into simpler substances and then absorbed into the blood.
(b) They enter the blood directly without digestion.
(c) They are converted into oxygen before absorption.
(d) They are stored in the stomach permanently.
- 12 A student places an opaque ball between a light source and a screen. No light passes through the ball, and a dark region appears on the screen. If the ball is replaced with a transparent glass sheet, what will most likely happen? 1
(a) A dark shadow will definitely form.
(b) Most light will pass through, so a dark shadow will not form.
(c) The glass will produce light.
(d) The screen will become completely dark.
- 13 In the experimental setup shown below, why does the lime water turn milky during the respiration of germinating seeds? 1



- (a) Release of carbon dioxide.
(b) Release of oxygen.
(c) Release of water vapour.
(d) Release of nitrogen.

- 14 After photosynthesis, plants convert excess glucose into a form that can be stored for later use. This stored form is mainly: 1
(a) Cellulose
(b) Starch
(c) Protein
(d) Oil
- 15 Which of the following sequences of changes takes place in the body when a person exhales? 1
(a) Diaphragm contracts and moves downward → chest cavity expands → air enters the lungs.
(b) Diaphragm relaxes and moves upward → chest cavity becomes smaller → air moves out of the lungs.
(c) Diaphragm contracts and moves upward → chest cavity becomes smaller → air enters the lungs.
(d) Diaphragm relaxes and moves downward → chest cavity expands → air moves out of the lungs.
- 16 Anjali makes a kaleidoscope by fixing three plane mirrors inside a tube in a triangular shape. When she looks through it, she observes attractive repeated designs. What is the primary factor responsible for the formation of these repeating patterns? 1
(a) Refraction of light
(b) Multiple reflections of light
(c) Absorption of light
(d) Scattering of light

For the following questions, two statements are given: one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (A), (B), (C), and (D) as given below

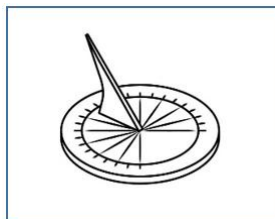
- (A) Both A and R are true, and R is the correct explanation of the assertion.***
(B) Both A and R are true, but R is not the correct explanation of the assertion.
(C) A is true, but R is false.
(D) A is false, but R is true

- 17 **Assertion (A):** The solutions which are neither acidic nor basic are called neutral solutions. 1
Reason (R): Orange juice is of acidic nature because it contains citric acid.
- 18 **Assertion (A):** Pins glued with wax to a heated metal strip fall off one after another as heat travels along the strip. 1
Reason (R): Wood and glass are poor conductors of heat, so they do not allow heat to pass through easily.
- 19 **Assertion (A):** Stomata are tiny pores responsible for gas exchange. 1
Reason (R): Stomata are found only on the upper surface of all leaves.
- 20 **Assertion (A):** In a plane mirror, the image of a red rose looks red, whereas its shadow is black. 1
Reason (R): The image is the same colour as the object, and the shadow is always dark.

SECTION B (2X6=12)

- 21 a) Identify the given device.

2



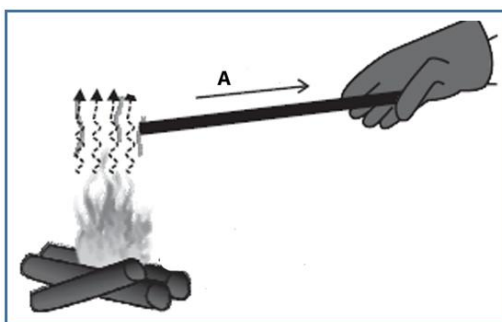
- b) On what principle does the above device work?

- 22 a) What are olfactory indicators?
b) State two properties of acids.

2

- 23 Observe the figure given below. **Identify and explain** the mode of heat transfer represented by A.

2



- 24 a) State one point of difference between breathing and respiration.
b) Why does chapati taste sweet after chewing for some time?

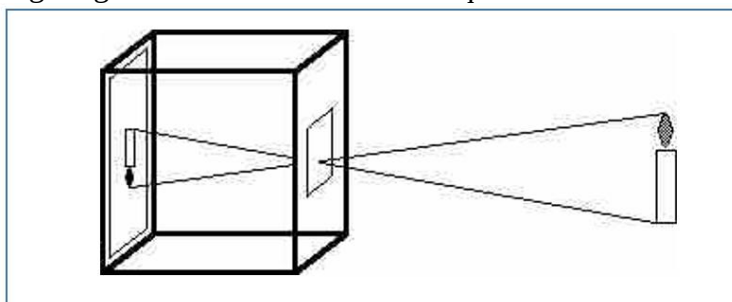
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- 25 a) What is the function of the digestive juice secreted by the stomach?
b) Explain why exhaled air contains more carbon dioxide than inhaled air?

2

- 26 Observe the figure given below and answer the questions that follow.

2



- a) Identify the device and state the principle on which it works.
b) What are the two characteristics of the image formed by the given device?

SECTION C (3X7=21)

- 27 a) What causes day and night?
b) Give two examples of reversible change.
c) A turmeric stain on a school uniform changes colour when washed with soap. Why?

1

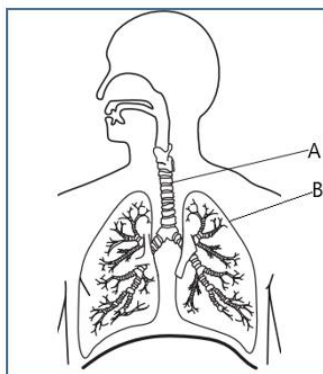
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1

- 28 A farmer was unhappy because of his low crop yield. After consulting an agricultural scientist, he learned that the soil in his field was either too acidic or too alkaline.
- a) What could be the possible reason for the soil becoming too acidic? 1
- b) Suggest one suitable substance that can be added to **acidic soil** and one that can be added to **basic soil** to improve its quality. 2

- 29 a) State any two applications of convection. 2
- b) Define infiltration. 1

- 30 a) The parts of the human respiratory system are indicated using A and B. Label the parts marked as A and B in the figure. 1



- b) (i) What are villi? 1
- (ii) What is the function of villi? 1
- 31 X is used by green plants in the presence of Y to produce Z and oxygen.
 $X + Y \rightarrow Z + \text{Oxygen}$
- a) **Identify** X, Y and Z. 1
- b) **Name** and **define** the process represented by this equation. 2
- 32 a) Write any four characteristics of the image formed by the plane mirror. 2
- b) An image of a pencil is observed in a plane mirror. The distance between the mirror and the image is 15 cm. If the pencil is moved 9 cm towards the mirror, then what would be the distance between the image and the object? 1
- 33 a) Draw a diagram showing shadow formation with a torch, object and screen. 1
- b) What is a shadow? Write any two essential conditions for the formation of a shadow. 2

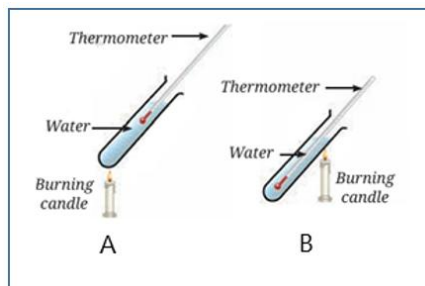
SECTION D (5X3=15)

- 34 a) Define neutralisation reaction. Write the word equation for this reaction. 1
- b) If you are provided with four colourless solutions: Sodium Hydroxide, Salt solution, Hydrochloric acid and Lime water. How will you identify each of them by using only red rose extract? 2

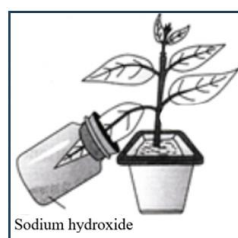
S. No.	Test Solution	Effect on Red rose extract
1.	Sodium Hydroxide	
2.	Salt solution	
3.	Hydrochloric acid	
4.	Lime water	

- c) How is litmus obtained? What is the use of this solution? 2

- 35 a) Draw a neat and labelled diagram of sea breeze. 2
 b) Give reasons: 2
 i) Tea remains hot for a longer time when served in a **clay or porcelain cup**.
 ii) We feel comfortable wearing light-coloured clothes during summer.
 c) Observe the figure given below. Two test containing water are heated using a candle flame as shown in figures A and B. **Which** thermometer will record a higher temperature and **why**? 1



- 36 a) Observe the experimental setup shown in the picture below and answer the following questions: 2



- i) What is the purpose of keeping sodium hydroxide solution in the setup?
 ii) What conclusion can be drawn from this experiment?
 b) State one point of difference between xylem and phloem. 2
 c) Draw a neat, labelled diagram to represent the stomata on the Rhoeo leaf. 1

SECTION E (4X3=12)

- 37 Read the passage below and answer the following questions.

A periscope is an optical instrument used to see objects that are not directly visible to the observer. It consists of a long tube with two plane mirrors placed at an angle of 45° to the tube. The mirrors are parallel to each other and reflect light from the object into the observer's eyes. Periscopes, which work on multiple reflections of light, are commonly used in submarines to observe objects above the surface of water while the submarine remains underwater.

- i) What is a periscope? Mention one use of a periscope. 1
 ii) At what angle are the mirrors placed in a periscope? 1
 iii) On what principle does the periscope work? 2
- 38 The liver and pancreas are important digestive organs that help in the digestion of food. The liver is the largest gland in the human body and produces bile, which is stored in the gallbladder. Bile helps in the digestion of fats by breaking large fat droplets into smaller droplets, a process called emulsification. The pancreas is a gland located below the stomach. It produces pancreatic juice, which contains enzymes that help digest carbohydrates, proteins and fats. The pancreatic juice is basic in nature and helps

neutralise acids present in the food. The liver and pancreas therefore play important roles in the digestion and absorption of nutrients in our body.

i) Explain the roles of the liver and pancreas in digestion.

1

ii) Where is the pancreas located in the human body?

1

iii) What is the nature of pancreatic juice?

2

39 Sana wanted to study how plants exchange gases with their environment. She took a healthy, potted balsam plant and carefully coated both the upper and lower surfaces of all its leaves with a thick, airtight layer of Vaseline (petroleum jelly). She then placed the plant on an open balcony where it received sufficient sunlight and watered the soil daily.

After a few days, Sana noticed that the leaves began to droop. By the end of the week, the plant had completely withered, turned yellow, and died, despite having plenty of water, soil nutrients, and sunlight.

Her science teacher explained that the Vaseline had completely sealed the microscopic, kidney-shaped guard cells and the tiny pores they surround, known as stomata. Stomata help in the exchange of gases. Vaseline completely cut off the plant's internal tissues from the atmosphere, stopping critical life-sustaining mechanisms like photosynthesis and respiration.

i) What did Sana notice in the leaves after applying Vaseline for a week?

1

ii) What is the primary function of stomata?

1

iii) Which two essential life processes in plants are hindered when Vaseline is applied to their leaves?

2

All the Best!