



Indian School Al Wadi Al Kabir

Mid-term Examination (2026-2027)

Sub: SCIENCE

Class: VIII

Date: 17/09/2026

Set- I

Max. Marks: 80

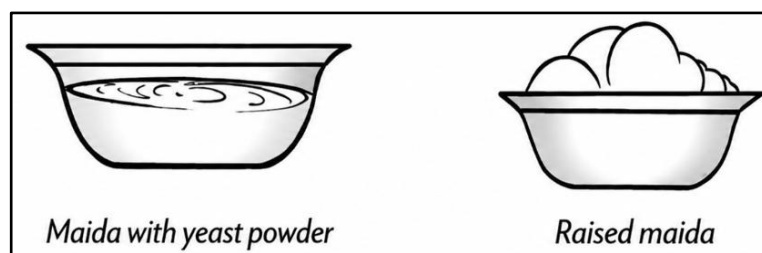
Time: 2½ Hours

General Instructions:

- (a) All questions are compulsory. Marks are indicated against each section.
- (b) The question paper comprises 9 pages and 39 questions in 5 sections A, B, C, D and E.
- (c) Q.1 to Q.16 in Section A -MCQ carry ONE mark each. Write the correct answer along with the option in the answer script.
- (d) Q.17 to Q.20 in Section A -Assertion and Reason carry ONE mark each.
- (e) Q.21 to Q.26 in Section B are Short Answer Type Questions and carry TWO marks each.
- (f) Q.27 to Q.33 in Section C are Short Answer Type Questions and carry THREE marks each.
- (g) Q.34 to Q.36 in Section D are Long Answer Type Questions and carry FIVE marks each.
- (h) Q.37 to Q.39 in Section E are Case study/Paragraph Questions and carry FOUR marks each.
- (i) Write the same question number as given in the question paper.
- (j) Correction fluid should not be used in the answer script.
- (k) Diagrams should be drawn using a pencil.

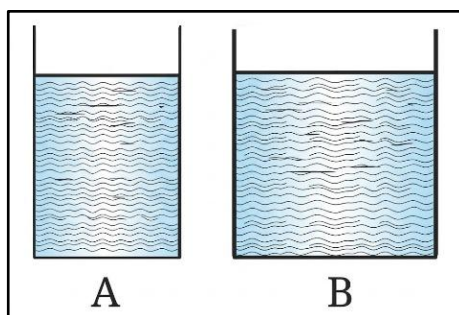
SECTION A (1 X 20 = 20)

- | | | |
|---|--|---|
| 1 | What is meant by 'systematic investigation' in science? | 1 |
| | (a) Doing one experiment only. | |
| | (b) Observing and changing one factor at a time. | |
| | (c) Repeating errors. | |
| | (d) Memorising theory. | |
| 2 | Which of the following is not a correct step in scientific investigation? | 1 |
| | (a) Forming a hypothesis. | |
| | (b) Ignoring unexpected results. | |
| | (c) Conducting experiments. | |
| | (d) Making observations. | |
| 3 | Observe the figure and mention the reason that causes the dough to rise when yeast is added to it. | 1 |

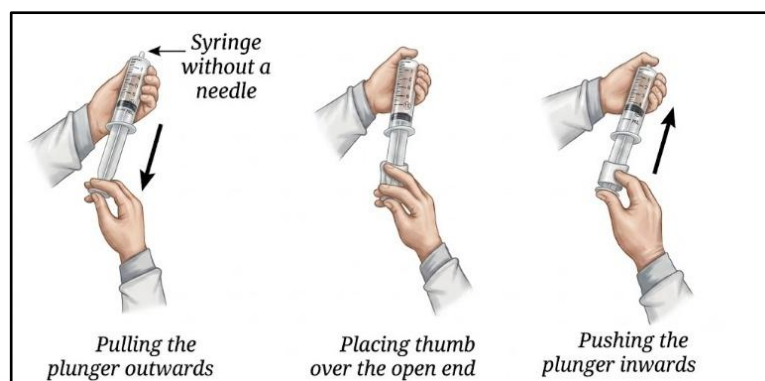


- (a) The release of carbon dioxide gas
 - (b) The release of oxygen gas
 - (c) The release of nitrogen gas
 - (d) The release of hydrogen gas
- 4 In a composting pit, microbes such as bacteria and fungi act on food scraps, dry leaves, and other organic waste. How do these microbes help in cleaning the environment? 1
- (a) By producing useful heat from waste
 - (b) By reducing unpleasant smell from waste
 - (c) By making organic waste harder and solid
 - (d) By decomposing organic waste into simpler substances
- 5 An experiment involves connecting two different metal plates, such as zinc and copper, to make a simple electric cell. Which component is essential for completing the setup and allowing the chemical reaction that produces electricity? 1
- (a) Dry air
 - (b) An insulating block
 - (c) A plastic casing
 - (d) An electrolyte
- 6 Atharva observes that the Nichrome wire inside a toaster becomes red-hot when the toaster is switched on. Which effect of electric current is responsible for this heating? 1
- (a) Magnetic effect of electric current
 - (b) Chemical effect of electric current
 - (c) Heating effect of electric current
 - (d) Cooling effect of electric current
- 7 If the force applied remains constant while the area of contact is doubled, what will happen to the pressure? 1
- (a) It will become twice the original pressure.
 - (b) It will remain the same as the original pressure.
 - (c) It will become half the original pressure.
 - (d) It will become four times the original pressure.

- 8 Two vessels, A and B, contain water up to the same level as shown in the figure below. P_A and P_B are the pressures at the bottom of the vessels. F_A and F_B are the forces exerted by the water at the bottom of the vessels A and B. 1

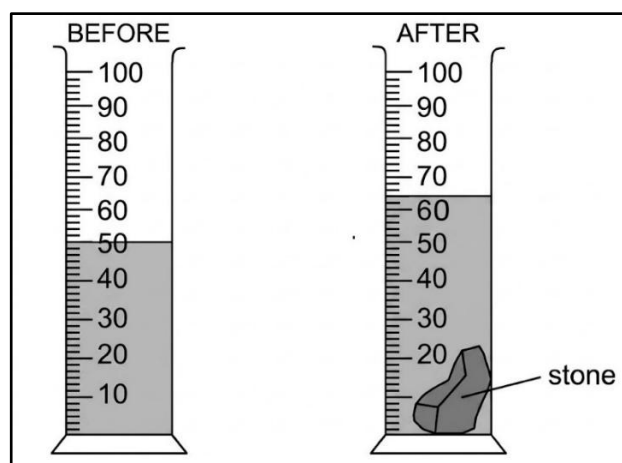


- (a) $P_A = P_B$, $F_A = F_B$
(b) $P_A > P_B$, $F_A > F_B$
(c) $P_A < P_B$, $F_A = F_B$
(d) $P_A = P_B$, $F_A < F_B$
- 9 Amar pressed a rubber sucker onto a smooth glass surface. Most of the air inside the sucker was pushed out, and the sucker stuck firmly to the glass. Why did the sucker stick to the glass? 1
- (a) The air pressure outside the sucker was greater than the pressure inside it.
(b) The air pressure inside the sucker was greater than the pressure outside it.
(c) The air pressure inside and outside the sucker was nearly the same.
(d) The air pressure disappeared completely from around the sucker.
- 10 When Aarav pushes the plunger of a syringe filled with air inward, the volume of air decreases. What does this observation tell us about the arrangement of particles in a gas? 1



- (a) Gas particles are tightly packed with no space between them.
(b) Gas particles are arranged closely in a fixed pattern.
(c) Gas particles cannot be compressed under any condition.
(d) Gas particles have large spaces that can be compressed easily.
- 11 Mahira compares two solids and finds that one melts at a lower temperature while the other melts at a higher temperature. Which statement best explains this difference? 1

- (a) Solids with weak interparticle attractions generally have lower melting points.
- (b) Solids with weak interparticle attractions generally have higher melting points.
- (c) Solids with strong interparticle attractions generally have lower melting points.
- (d) All solids have the same melting point because their particles are closely packed.
- 12 Reema placed two different objects in a beaker of water to observe how density affects their behaviour. Object A floated on the surface, while Object B sank to the bottom. Which statement correctly explains this observation? 1
- (a) Object A has a greater density than water, while Object B has a lower density.
- (b) Object A has a lower density than water, while Object B has a greater density.
- (c) Both objects have a density equal to that of water.
- (d) Both objects have a density greater than that of water.
- 13 The following diagram shows a measuring cylinder used to measure the volume of a small stone. What is the volume of the stone? 1



- (a) 10 mL
- (b) 25 mL
- (c) 20 mL
- (d) 14 mL
- 14 When two liquids are mixed to form a solution, it may not always be clear which liquid is the solute and which is the solvent. How are the solute and solvent identified in such a case? 1
- (a) The smaller amount is the solvent, and the larger amount is the solute.
- (b) The smaller amount is the solute, and the larger amount is the solvent.
- (c) Both liquids are always considered equal solutes and solvents
- (d) The liquid with higher density is the solute, and the other is the solvent
- 15 In a pond, fish feed on dragonfly larvae, resulting in a decline in the dragonfly population. This allows the populations of bees, flies and butterflies to increase, leading to greater 1

pollination of nearby flowering plants. What is the most likely effect of increased pollination on these plants?

- (a) They produce fewer seeds.
- (b) They stop producing flowers.
- (c) They produce more seeds.
- (d) They become dependent on fish.

16 Neha's family wants to maintain healthy soil and support the natural balance of organisms on their farm. Which of the following farming practices would be most suitable for achieving this? 1

- (a) Using more pesticides to control harmful pests.
- (b) Using more water and ploughing the soil often.
- (c) Growing one crop and using many chemical inputs.
- (d) Growing different crops and using natural compost.

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 Earth behaves like a giant magnet. 1

Reason (R): The movement of liquid iron in the core creates electric currents, which generate a magnetic field.

18 **Assertion (A):** Suspended Particulate Matter (SPM) refers to the constituent particles of matter, such as atoms and molecules, present in air. 1

Reason (R): Dust particles suspended in the air are made up of a very large number of atoms and molecules.

19 **Assertion (A):** A mixture of sand and water is a solution. 1

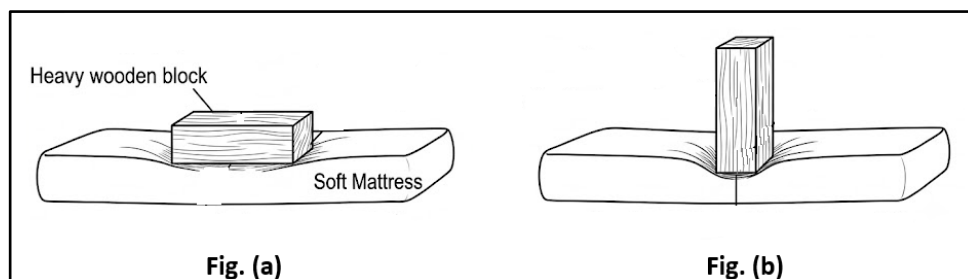
Reason (R): A solution is said to be formed when two or more substances mix to form a uniform mixture.

20 **Assertion (A):** Heavy irrigation and repeated ploughing can affect the environment. 1

Reason (R): It can disturb soil organisms like earthworms and snails, which are important for maintaining ecological balance.

SECTION B (2 X 6 = 12)

- 21 Why is curiosity considered the foundation of science? 2
- 22 State the ways by which the strength of an electromagnet can be **increased**. 2
- 23 Figure (a) shows a heavy wooden block resting flat on a soft mattress, while Figure (b) shows the same wooden block placed vertically on one of its smaller ends on the same mattress. In which position will the block depress the mattress more? Give reason. 2



- 24 How would you describe the process of diffusion? 2
- 25 **Draw** a neat and **well-labelled** diagram showing the different **layers of the Earth**. 2
- 26 What does monoculture mean? State its disadvantages. 2

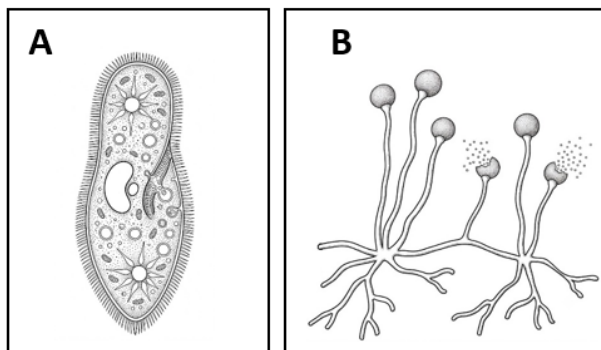
SECTION C (3 X 7 = 21)

- 27 a) Why does a puri puff up when it is fried? 1
- b) Why is it advised to change only one variable in an experiment? 2
- 28 a) Why are rechargeable batteries considered more environmentally friendly than disposable ones? 1
- b) Draw a neat, well-labelled diagram of a **Voltaic cell**, showing its **electrodes** and **electrolyte** clearly. 2
- 29 a) Why do roofs sometimes get blown away during strong storms? 1
- b) Calculate the **pressure** exerted when a force of 800 N acts uniformly over an area of 2.0 m². 2
- 30 a) Rudra took a glass tumbler half-filled with water. He added two teaspoons of sugar to it, stirred the water, and observed that the water level decreased slightly. Then he repeated the experiment with sand instead of sugar.
- (i) Why did the water level decrease when sugar dissolved in water? 1
- (ii) What happens when sand is added to water instead of sugar? 1
- b) Why does potassium permanganate dissolve faster and spread more quickly in hot water than in cold water? 1

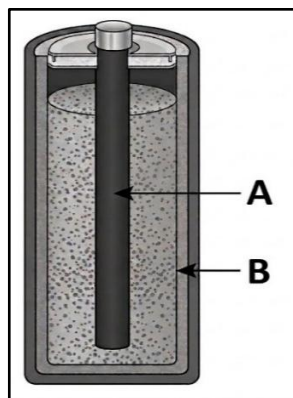
- 31 a) How are uniform mixtures different from non-uniform mixtures? 1
 b) An object has a mass of 400 g and occupies a volume of 40 cm³. Calculate its **density**. 2
- 32 a) What is the principle behind the working of hot air balloons? 1
 b) A student observes that pressure affects substances differently. When pressure is increased, gases show a noticeable change in density, while solids show very little change.
 (i) How does increasing pressure affect the density of a gas? 1
 (ii) Why is the effect of pressure on the density of solids usually negligible? 1
- 33 a) Draw a **food chain** from any ecosystem. 1
 b) Differentiate between mutualism and parasitism with **examples**. 2

SECTION D (5 X 3 = 15)

- 34 a) Why do farmers prefer to grow beans and peas in nitrogen-deficient soils? 1
 b) Draw a neat, well-labelled diagram of an **animal cell**. 2
 c) **Identify** the given microorganisms A and B and **name the group** that they belong to: 2



- 35 a) What happens to the direction of deflection of a compass needle when the battery terminals connected to a coil are reversed? Explain. 2
 b) What are the problems that can occur due to the heating effect of electric current? 2
 c) **Identify** and **label** the parts marked 'A' and 'B' in the diagram of a simple electric cell. 1



- 36 a) Why does a liquid take the shape of its container while a solid does not? 2
- b) Why does the Earth's atmosphere remain around the planet even though the attraction between gas particles is weak? 2
- c) How does soap help in removing oil stains from clothes? 1

SECTION E (4 X 3 = 12)

- 37 Read the passage given below and answer the following questions:

Microalgae are tiny plant-like organisms that live in water, soil, air, and even on trees. They make their own food using sunlight and, through photosynthesis, release oxygen that contributes more than half of Earth's oxygen supply. They are also an important food source for many aquatic animals.

Some microalgae, such as Spirulina, Chlorella, and Diatoms, are useful to humans. Spirulina is considered a superfood because it is rich in nutrients and is a good source of vitamin B12, which is essential for our bodies. Microalgae are also used in medicines, water purification, and biofuel production. However, pollution, climate change, and habitat destruction are threatening their diversity and abundance. Therefore, conserving microalgae is important for maintaining the oxygen balance, supporting aquatic food chains, clean water, and protecting the environment.

- i) How do microalgae help maintain the oxygen supply on Earth? 1
- ii) Why is Spirulina called a superfood? 1
- iii) Why is it important to conserve microalgae? 2
- 38 Read the passage given below and answer the following questions:

During a thunderstorm, strong winds cause ice particles and water droplets to rub against each other, producing static electric charges. The lighter, positively charged ice particles move upward, while the heavier, negatively charged water droplets move downward, causing charge separation. When the negatively charged cloud comes near the ground, nearby objects become positively charged. A sudden flow of charges takes place, producing a bright flash of light called lightning. Lightning heats the air, causing it to expand and produce thunder. During lightning, we should stay away from tall objects, crouch in a low-lying area, minimise contact with the ground, avoid lying flat, metallic umbrellas and water, and stay inside a bus or car, which is comparatively safer. A lightning conductor is a device that protects buildings from the effects of lightning by providing an easy and safe path for electric charges to flow into the ground.

- | | |
|---|---|
| i) How does a lightning conductor safely protect a building from lightning? | 1 |
| ii) What is lightning? How is thunder produced? | 1 |
| iii) What precautions should be taken during lightning? | 2 |

39 Read the passage given below and answer the following questions:

An ecosystem consists of both biotic and abiotic components that interact with one another. Biotic components are the living parts of an ecosystem, such as plants, animals and microorganisms, whereas abiotic components are the non-living parts, such as air, water, soil, sunlight and temperature. Plants depend on abiotic components for their growth and survival. Sunlight, carbon dioxide and water help plants make food, while soil provides nutrients and support. Air supplies oxygen for respiration, and water is essential for all living organisms. At the same time, living organisms also influence the abiotic environment. Plants contribute to the abiotic environment by releasing oxygen during photosynthesis, preventing soil erosion through their roots, retaining soil moisture, and helping to cool the atmosphere. Ecosystems provide many benefits to humans. Forests provide fresh air, fertile soil, food, fibres, timber and medicines, while aquatic ecosystems provide water and food. Ecosystems also offer aesthetic and recreational benefits that contribute to human well-being. Thus, biotic and abiotic components are interdependent, showing the close relationship between nature and human life.

- | | |
|--|---|
| i) How do plants contribute to the abiotic environment? | 1 |
| ii) What benefits do ecosystems provide to humans? | 1 |
| iii) Write the difference between biotic and abiotic components of an ecosystem with examples. | 2 |

All the Best