# MATH LOVE INSTITUTE

**Education as a Service (EaaS)**

**SAMPLE PAPER - SET 5**

**SESSION: 2025-26**

+91-7869553517 | www.mathlove.in



| | | | |
|---|---|---|---|
| **Class** | IX | Subject | Science (086) |
| **Time Allowed** | 3 Hours | Maximum Marks | 80 |
| **Date** | _____ | Student Name | _____ |

## GENERAL INSTRUCTIONS:

1. This question paper consists of **39 questions** in **5 sections**.
2. **All questions are compulsory.** However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.
3. **Section A** consists of 20 Objective Type questions carrying **1 mark each**.
4. **Section B** consists of 6 Very Short Answer questions carrying **2 marks each**. Answers to these questions should be in the range of 30 to 50 words.
5. **Section C** consists of 7 Short Answer type questions carrying **3 marks each**. Answers to these questions should be in the range of 50 to 80 words.
6. **Section D** consists of 3 Long Answer type questions carrying **5 marks each**. Answers to these questions should be in the range of 80 to 120 words.
7. **Section E** consists of 3 source-based/case-based units of assessment of **4 marks each** with sub-parts.

## SECTION A (20 × 1 = 20 Marks)

**Q1. Which of the following is a physical change?** **[1]**

(a) Rusting of iron

(b) Burning of coal

(c) Dissolving sugar in water

(d) Cooking of food

**Q2. Which separation technique is used to obtain different gases from air?** **[1]**

(a) Filtration

(b) Distillation

(c) Fractional distillation

(d) Chromatography

**Q3. The molecular mass of water ($H_2O$) is:** **[1]**

(a) 16 u

(b) 18 u

(c) 20 u

(d) 32 u

**Q4. The maximum number of electrons in the outermost shell can be:** **[1]**

(a) 2

(b) 4

(c) 6

(d) 8

**Q5. The semifluid matrix present inside the cell is called:** **[1]**

(a) Protoplasm

(b) Cytoplasm

(c) Nucleoplasm

(d) Plasma membrane

**Q6. Which of the following is NOT a type of permanent tissue?** **[1]**

(a) Parenchyma

(b) Collenchyma

(c) Meristem

(d) Sclerenchyma

**Q7. A body is moving with constant velocity. Its acceleration is:** **[1]**

(a) Positive

(b) Negative

(c) Zero

(d) Cannot be determined

**Q8. According to Newton's third law, action and reaction forces:** **[1]**

(a) Act on the same body

(b) Act on different bodies

(c) Are in the same direction

(d) Have different magnitudes

**Q9. The value of universal gravitational constant G is:** **[1]**

(a) $6.67 \times 10^{-11}$ N m² kg⁻²

(b) $6.67 \times 10^{-10}$ N m² kg⁻²

(c) 9.8 m/s²

(d) 9.8 N/kg

**Q10. The SI unit of power is:** **[1]**

(a) Joule

(b) Newton

(c) Watt

(d) Joule per second

**Q11. The audible range of human ear is:** **[1]**

(a) 20 Hz to 200 Hz

(b) 20 Hz to 2000 Hz

(c) 20 Hz to 20,000 Hz

(d) 200 Hz to 20,000 Hz

**Q12. Latent heat of vaporization of water is:** **[1]**

(a) $3.34 \times 10^5$ J/kg

(b) $22.6 \times 10^5$ J/kg

(c) $2.26 \times 10^6$ J/kg

(d) $3.34 \times 10^6$ J/kg

**Q13. The number of atoms in one molecule of sulphuric acid ($H_2SO_4$) is:** **[1]**

(a) 5

(b) 6

(c) 7

(d) 8

**Q14. Isobars are atoms having:** **[1]**

(a) Same atomic number but different mass number

(b) Different atomic number but same mass number

(c) Same atomic number and same mass number

(d) Different atomic number and different mass number

**Q15. Ribosomes are the site of:** **[1]**

(a) Protein synthesis

(b) Fat synthesis

(c) Photosynthesis

(d) Respiration

**Q16. ASSERTION-REASON TYPE QUESTIONS** **[1]**

**Assertion (A):** Rate of evaporation increases with increase in temperature.

**Reason (R):** At higher temperature, more particles have enough kinetic energy to overcome the forces of attraction.

(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

**Q17. ASSERTION-REASON TYPE QUESTIONS** **[1]**

**Assertion (A):** The valency of nitrogen is 3.

**Reason (R):** Nitrogen has 5 electrons in its outermost shell.

(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



**Q18. ASSERTION-REASON TYPE QUESTIONS** **[1]**

**Assertion (A):** Plant cells have large vacuoles.

**Reason (R):** Vacuoles in plant cells help maintain turgor pressure.

(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

**Q19. ASSERTION-REASON TYPE QUESTIONS** **[1]**

**Assertion (A):** A body with uniform velocity has zero acceleration.

**Reason (R):** Acceleration is the rate of change of velocity.

(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

**Q20. ASSERTION-REASON TYPE QUESTIONS** **[1]**

**Assertion (A):** A person standing in a moving bus falls backward when the bus suddenly starts.

**Reason (R):** This is due to inertia of rest.

(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



## SECTION B (6 × 2 = 12 Marks)

**Q21.** What is meant by latent heat of fusion? Why is it called latent? **[2]**

**Q22.** Differentiate between a mixture and a compound with one example of each. **[2]**

**Q23.** An element has atomic number 12. State its (a) electronic configuration, and (b) valency. **[2]**

**Q24.** What is the function of Golgi apparatus? Why is it called the packaging organelle? **[2]**

**Q25.** Define uniform and non-uniform motion. Give one example of each. **[2]**

**Q26.** What is momentum? Write its SI unit and formula. **[2]**

## SECTION C (7 × 3 = 21 Marks)

**Q27.** (a) What is the boiling point of water in Kelvin scale? **[3]**

(b) Why does temperature remain constant during the change of state of matter?

(c) Name two factors on which rate of evaporation depends.

**Q28.** Differentiate between elements, compounds, and mixtures on the basis of: **[3]**

(a) Composition

(b) Properties

(c) Separation methods

**Q29.** Calculate the formula unit mass of: **[3]**

(a) Calcium chloride ($CaCl_2$)

(b) Sodium carbonate ($Na_2CO_3$)

(c) Aluminium oxide ($Al_2O_3$)

[Given: Atomic masses: Ca = 40 u, Cl = 35.5 u, Na = 23 u, C = 12 u, O = 16 u, Al = 27 u]

**Q30. OR** **[3]**

(a) What is the difference between atomic mass and molecular mass?

(b) Calculate the mass of $3.011 \times 10^{23}$ molecules of nitrogen ($N_2$).

[Given: Atomic mass of N = 14 u, Avogadro's number = $6.022 \times 10^{23}$]

**Q31.** (a) Draw Bohr's model of an atom showing the three shells. **[3]**

(b) State two main postulates of Bohr's model of atom.

(c) What are the limitations of Bohr's model?



**Q32. OR** **[3]**

(a) Define valence electrons and valency.

(b) An element X has electronic configuration 2, 8, 2. Find its valency.

(c) Which group and period does element X belong to in the periodic table?

**Q33.** (a) What is the significance of having a cell membrane? **[3]**

(b) Differentiate between prokaryotic and eukaryotic cells.

(c) Name one prokaryotic organism and one eukaryotic organism.

**Q34.** From a velocity-time graph, how can we determine: **[3]**

(a) Acceleration of the body

(b) Distance travelled by the body

Draw a velocity-time graph for a uniformly retarded motion.

**Q35. OR** **[3]**

A driver of a car travelling at 52 km/h applies the brakes and accelerates uniformly in the opposite direction. The car stops in 5 seconds. Find:

(a) The acceleration of the car

(b) The distance travelled by the car after applying brakes



## SECTION D (3 × 5 = 15 Marks)

**Q36.** (a) State Newton's second law of motion and derive the equation F = ma from it. **[5]**

(b) A force of 20 N acts on a body of mass 5 kg for 10 seconds. The body is initially at rest. Calculate:

(i) The acceleration produced

(ii) The final velocity

(iii) The distance travelled

**OR**

(a) Define free fall. Derive the equations of motion for a freely falling body.

(b) A stone is dropped from the top of a tower 500 m high. Calculate:

(i) The time taken to reach the ground

(ii) The velocity with which it strikes the ground

[Take g = 10 m/s²]

**Q37.** (a) State the law of conservation of energy. **[5]**

(b) Explain mechanical energy and prove that the sum of kinetic and potential energy remains constant for a freely falling body.

(c) A body of mass 5 kg falls from a height of 20 m. Calculate its:

(i) Potential energy at the top

(ii) Kinetic energy just before hitting the ground

[Take g = 10 m/s²]

**OR**

(a) Define the following terms with their SI units:

(i) Work (ii) Energy (iii) Power

(b) A pump is required to lift 800 kg of water per minute from a well 12 m deep and to eject it with a speed of 20 m/s. Calculate the power of the engine. [Take g = 10 m/s²]



**Q38.** (a) Draw a well-labeled diagram of an animal cell showing all the major organelles. **[5]**

(b) Write the functions of:

(i) Nucleus (ii) Mitochondria (iii) Endoplasmic Reticulum

(c) Why is the cell called the structural and functional unit of life?

**OR**

(a) What are the different types of plant tissues? Draw a labeled diagram showing them.

(b) Differentiate between meristematic tissue and permanent tissue.

(c) Name the tissue that forms the inner lining of the mouth and blood vessels.



## SECTION E (3 × 4 = 12 Marks)

### CASE STUDY 1: PARTICLES OF MATTER AND STATES OF MATTER

Matter is made up of tiny particles that are constantly moving and have spaces between them. These particles attract each other. The three states of matter - solid, liquid, and gas - differ in the arrangement and movement of their particles. In solids, particles are tightly packed with strong intermolecular forces, allowing only vibrational motion. In liquids,

particles are loosely packed with moderate forces, allowing them to slide past each other. In gases, particles are far apart with negligible forces, moving freely and randomly. A student heated ice cubes in a beaker and observed that ice melted into water at 0°C, and then water started boiling at 100°C to form steam. During melting and boiling, the temperature remained constant despite continuous heating.

**(i) Why does temperature remain constant during the change of state?** [1 mark]

**(ii) Arrange solid, liquid, and gas in increasing order of intermolecular forces.** [1 mark]

**OR**
**Why do gases have neither fixed shape nor fixed volume?** [1 mark]

**(iii) Calculate the amount of heat energy required to convert 5 kg of ice at 0°C to water at 0°C. (Latent heat of fusion of ice = $3.34 \times 10^5$ J/kg)** [2 marks]



**CASE STUDY 2: DALTON'S ATOMIC THEORY AND LAW OF CONSERVATION OF MASS**

John Dalton proposed the atomic theory in 1808. According to Dalton's atomic theory, all matter is made up of tiny indivisible particles called atoms. Atoms of the same element are identical in all respects, while atoms of different elements have different masses and properties. Atoms cannot be created or destroyed in a chemical reaction. During chemical reactions, atoms combine in simple whole number ratios to form compounds. This theory successfully explained the law of conservation of mass which states that mass can neither be created nor destroyed in a chemical reaction. A student performed an experiment by mixing silver nitrate solution with sodium chloride solution. A white precipitate of silver chloride was formed along with sodium nitrate solution. The total mass before and after the reaction remained the same.

**(i) State the law of conservation of mass.** [1 mark]

**(ii) According to Dalton's atomic theory, what happens to atoms during a chemical reaction?** [1 mark]

**OR**

**What is the ratio by mass in which hydrogen and oxygen combine to form water?** [1 mark]

**(iii) When 10 g of calcium carbonate is heated, 5.6 g of calcium oxide is formed along with carbon dioxide. Calculate the mass of carbon dioxide formed and verify the law of conservation of mass.** [2 marks]



**CASE STUDY 3: ARCHIMEDES' PRINCIPLE AND FLOATATION**

When an object is immersed in a fluid, it experiences an upward force called buoyant force or upthrust. Archimedes' principle states that when a body is immersed partially or completely in a fluid, it experiences an upward force equal to the weight of the fluid displaced by it. This principle explains why some objects float while others sink in water. An object floats if its density is less than the density of the fluid, and sinks if its density is greater. A student performed an experiment by immersing a solid iron sphere in water. He found that the sphere weighed 50 N in air but only 40 N when completely immersed in water. This loss in weight is due to the buoyant force exerted by water. Ships are made of steel (which is denser than water) but they float because they are hollow and their overall density is less than water.

**(i) State Archimedes' principle.** [1 mark]

**(ii) Calculate the buoyant force acting on the iron sphere mentioned in the passage.** [1 mark]

**OR**

**Why does a ship made of steel float on water while a small piece of steel sinks?** [1 mark]

**(iii) A body weighs 60 N in air and 45 N when fully immersed in water. Calculate: (a) the loss in weight, (b) the upthrust, and (c) the volume of the body. (Take density of water = 1000 kg/m³ and g = 10 m/s²)** [2 marks]

# *** END OF QUESTION PAPER ***

**Total Marks: 80**

All the Best! 🍀

---



H-1 Street 2, V V Vihar, Shankar Nagar, Raipur (C.G.)

+91-7869553517 | 🌐 www.mathlove.in | [email protected]

*Empowering Education | Building Futures | Excellence in Learning*

# 🔑 DETAILED ANSWER KEY 🔑

# CBSE CLASS 9 SCIENCE - SAMPLE PAPER 5

**Complete Step-by-Step Solutions with Marking Scheme**

Prepared by Expert Faculty of Math Love Institute



## SECTION A - ANSWERS (20 × 1 = 20 Marks)

### OBJECTIVE TYPE QUESTIONS - ANSWERS:

| Q.No. | Answer | Q.No. | Answer | Q.No. | Answer | Q.No. | Answer |
|---|---|---|---|---|---|---|---|
| Q1 | (c) | Q6 | (c) | Q11 | (c) | Q16 | (a) |
| Q2 | (c) | Q7 | (c) | Q12 | (c) | Q17 | (b) |
| Q3 | (b) | Q8 | (b) | Q13 | (c) | Q18 | (a) |
| Q4 | (d) | Q9 | (a) | Q14 | (b) | Q19 | (a) |
| Q5 | (b) | Q10 | (c) | Q15 | (a) | Q20 | (a) |

**Marking Scheme:** 1 mark for each correct answer. No negative marking.



## SECTION B - ANSWERS (6 × 2 = 12 Marks)

### Q21. Answer:

**Latent heat of fusion:** The amount of heat energy required to convert 1 kg of solid into liquid at its melting point without any change in temperature is called latent heat of fusion.

It is called "latent" (meaning hidden) because the heat energy absorbed during melting does not cause any rise in temperature. Instead, this energy is used to overcome the intermolecular forces of attraction between particles and change the state from solid to liquid.

> **Marking Scheme:** 1 mark for definition + 1 mark for explanation

### Q22. Answer:

**Mixture:** A substance formed by mixing two or more substances in any proportion. Components retain their properties.
Example: Air

**Compound:** A pure substance formed by chemical combination of two or more elements in fixed proportion.
Example: Water ($H_2O$)

> **Marking Scheme:** 1 mark for each with example

### Q23. Answer:

(a) Electronic configuration: **2, 8, 2**
(b) Valency: **2**

> **Marking Scheme:** 1 mark each

### Q24. Answer:

Golgi apparatus modifies and packages proteins and lipids. It is called the packaging organelle because it packages materials in membrane-bound vesicles and dispatches them to various destinations.

**Marking Scheme:** 1 mark for function + 1 mark for explanation

### Q25. Answer:

**Uniform Motion:** Equal distances in equal time intervals. Example: Car at constant speed.
**Non-uniform Motion:** Unequal distances in equal time intervals. Example: Car in city traffic.

**Marking Scheme:** 1 mark each

### Q26. Answer:

**Momentum:** Product of mass and velocity
Formula: $p = m \times v$
SI Unit: kg m/s

**Marking Scheme:** 2 marks total



## SECTION C - ANSWERS (7 × 3 = 21 Marks)

### Q27. Answer:

(a) Boiling point of water = 100°C = 100 + 273 = **373 K**

(b) Temperature remains constant during change of state because the heat energy

supplied is used to overcome intermolecular forces of attraction, not to increase kinetic energy of particles.

(c) Two factors: (1) Temperature (2) Surface area (Other answers: humidity, wind speed)

**Marking Scheme:** 1 mark each part

### Q28. Answer:

| **Basis** | **Elements** | **Compounds** | **Mixtures** |
|---|---|---|---|
| Composition | One type of atom | Two or more elements in fixed ratio | Two or more substances in any ratio |
| Properties | Uniform properties | Different from constituents | Show properties of constituents |
| Separation | Cannot be separated | Only by chemical methods | By physical methods |

**Marking Scheme:** 1 mark each basis

### Q29. Answer:

(a) $CaCl_2 = 40 + 2(35.5) = 40 + 71 =$ **111 u**

(b) $Na_2CO_3 = 2(23) + 12 + 3(16) = 46 + 12 + 48 =$ **106 u**

(c) $Al_2O_3 = 2(27) + 3(16) = 54 + 48 =$ **102 u**

**Marking Scheme:** 1 mark each

### Q30. Answer (OR):

(a) Atomic mass is mass of one atom; Molecular mass is sum of atomic masses in one molecule

(b) Number of moles = $3.011 \times 10^{23} / 6.022 \times 10^{23} = 0.5$ moles
Molecular mass of $N_2 = 28$ g/mol
Mass = $0.5 \times 28 =$ **14 g**

> **Marking Scheme:** 1 mark for difference + 2 marks for calculation

### Q31. Answer:

(a) [Diagram showing nucleus at center with K, L, M shells and electrons]

(b) Two postulates:
1. Electrons revolve in fixed circular orbits with fixed energy
2. Electrons do not radiate energy while in stationary orbits

(c) Limitations: Could not explain multi-electron atoms' spectra, Zeeman/Stark effects, 3D structure

> **Marking Scheme:** 1 mark each part

### Q32. Answer (OR):

(a) Valence electrons: Electrons in outermost shell
Valency: Combining capacity of an atom

(b) Configuration 2, 8, 2 → Valency = **2**

(c) Period = **3** (3 shells), Group = **2** (2 valence electrons)

> **Marking Scheme:** 1 mark each part

**Q33. Answer:**

(a) Cell membrane separates cell from environment, is selectively permeable, regulates material movement

(b) Prokaryotic: No nucleus, smaller; Eukaryotic: Has nucleus, larger, has organelles

(c) Prokaryotic: Bacteria; Eukaryotic: Amoeba/Human

**Marking Scheme:** 1 mark each part

**Q34. Answer:**

(a) Acceleration = Slope of v-t graph
(b) Distance = Area under v-t graph
[Graph: Straight line with negative slope from velocity axis to time axis]

**Marking Scheme:** 1 mark each + 1 for graph

**Q35. Answer (OR):**

u = 52 km/h = 14.44 m/s, v = 0, t = 5 s

(a) a = (v - u)/t = (0 - 14.44)/5 = **-2.89 m/s²**

(b) s = ut + ½at² = 14.44(5) + ½(-2.89)(25) = 72.2 - 36.1 = **36.1 m**

**Marking Scheme:** 1½ marks each part



# SECTION D - ANSWERS (3 × 5 = 15 Marks)

### Q36. Answer:

(a) **Newton's Second Law:** Rate of change of momentum is proportional to applied force

**Derivation:**

$F \propto (mv - mu)/t$

$F \propto m(v - u)/t$

$F \propto ma$

**$F = ma$**

(b) $F = 20$ N, $m = 5$ kg, $t = 10$ s, $u = 0$

(i) $a = F/m = 20/5 =$ **$4$ m/s²**

(ii) $v = u + at = 0 + 4(10) =$ **$40$ m/s**

(iii) $s = ut + \frac{1}{2}at^2 = 0 + \frac{1}{2}(4)(100) =$ **$200$ m**

> **Marking Scheme:** 2 marks for law & derivation + 1 mark each calculation

### Q36. Answer (OR):

(a) **Free fall:** When object falls under gravity alone

Equations: $v = gt$, $h = \frac{1}{2}gt^2$, $v^2 = 2gh$

(b) $h = 500$ m, $u = 0$, $g = 10$ m/s²

(i) $h = \frac{1}{2}gt^2 \rightarrow 500 = 5t^2 \rightarrow t =$ **$10$ seconds**

(ii) $v = gt = 10(10) =$ **$100$ m/s**

> **Marking Scheme:** 2 marks for definition & equations + 3 marks for calculations

### Q37. Answer:

(a) **Law:** Energy cannot be created or destroyed, only transformed

(b) **Mechanical Energy** = KE + PE
At height h: E = mgh + 0 = mgh
At height x: E = mg(h-x) + mgx = mgh
At ground: E = mgh + 0 = mgh
Total energy remains constant

(c) m = 5 kg, h = 20 m, g = 10 m/s²
(i) PE = mgh = 5(10)(20) = **1000 J**
(ii) KE = PE = **1000 J**

> **Marking Scheme:** 1 + 2 + 2 marks

### Q37. Answer (OR):

(a) Work = Force × Displacement, Unit: Joule
Energy = Capacity to do work, Unit: Joule
Power = Work/Time, Unit: Watt

(b) m = 800 kg, h = 12 m, v = 20 m/s, t = 60 s
Work for lifting = mgh = 800(10)(12) = 96,000 J
Work for KE = ½mv² = ½(800)(400) = 160,000 J
Total work = 256,000 J
Power = 256,000/60 = **4266.67 W or 4.27 kW**

> **Marking Scheme:** 1½ marks for definitions + 3½ marks for calculation

### Q38. Answer:

(a) [Diagram showing cell membrane, cytoplasm, nucleus, mitochondria, ER, Golgi, ribosomes, lysosomes]

(b) Nucleus: Controls cell activities, contains DNA
Mitochondria: Cellular respiration, produces ATP
ER: Protein synthesis (rough), lipid synthesis (smooth)

(c) Structural unit: All organisms made of cells
Functional unit: All life processes occur in cells

**Marking Scheme:** 2 + 1½ + 1½ marks

### Q38. Answer (OR):

(a) Types: Meristematic (apical, lateral, intercalary), Permanent (simple: parenchyma, collenchyma, sclerenchyma; complex: xylem, phloem)
[Diagram showing different tissues]

(b) Meristematic: Dividing cells, small, thin walls
Permanent: Non-dividing, large, thick/thin walls

(c) **Epithelial tissue**

**Marking Scheme:** 1 + 1 + 2 + 1 marks



## SECTION E - ANSWERS (3 × 4 = 12 Marks)

### CASE STUDY 1 - ANSWERS:

**(i)** Temperature remains constant because heat energy is used to overcome intermolecular forces, not to increase kinetic energy.

Marks: 1

**(ii)** Gas < Liquid < Solid (increasing order)

Marks: 1

**OR:** Gases have weak intermolecular forces; particles move freely and randomly, taking shape and volume of container.

Marks: 1

**(iii)** Heat = m × L = 5 × 3.34 × $10^5$ = **1.67 × $10^6$ J**

Marks: 2

## CASE STUDY 2 - ANSWERS:

**(i)** Mass cannot be created or destroyed in a chemical reaction. Total mass of reactants = Total mass of products.

Marks: 1

**(ii)** Atoms are rearranged but not created or destroyed.

Marks: 1

**OR:** Hydrogen and oxygen combine in **1:8 ratio by mass**

Marks: 1

**(iii)** Mass of $CaCO_3$ = 10 g, CaO = 5.6 g
Mass of $CO_2$ = 10 - 5.6 = **4.4 g**
Verification: 10 g = 5.6 + 4.4 g ✓

Marks: 2

## CASE STUDY 3 - ANSWERS:

**(i)** When a body is immersed in fluid, it experiences upward force equal to weight of fluid displaced.

Marks: 1

**(ii)** Buoyant force = 50 - 40 = **10 N**

Marks: 1

**OR:** Ship is hollow, overall density less than water, so it floats. Solid steel piece has density greater than water, so it sinks.

Marks: 1

**(iii)** (a) Loss in weight = 60 - 45 = **15 N**
(b) Upthrust = **15 N**
(c) $15 = V \times 1000 \times 10 \rightarrow V = \mathbf{1.5 \times 10^{-3}\ m^3}$

Marks: 2



## 📚 END OF COMPLETE ANSWER KEY 📚

**Total Marks: 80**

All sections answered with detailed step-by-step solutions
Practice regularly for excellent exam preparation!



H-1 Street 2, V V Vihar, Shankar Nagar, Raipur (C.G.)