

GOVT.HPS....., TQ:

DIST:

Subject Teacher:

Question Paper Design & Weightage Distribution

Class: 7th Standard

Subject: Science (English Medium)

Max Marks: 40

Total Questions: 24

A) Weightage to Objectives

Objectives	Questions	Marks	Percentage (%)
Knowledge	7	10	25%
Understanding	13	18	45%
Application	3	8	20%
Skill	1	4	10%
Total	24	40	100%

C) Weightage to Form of Questions

Question Type	Questions	Marks	Percentage (%)
Objective (1 Mark)	12	12	30%
Very Short Answer (2 Marks)	10	20	50%
Long Answer (4 Marks)	2	8	20%
Total	24	40	100%

B) Weightage to Lessons (Semester 1)

Sl.No	Lesson Title	Questions	Marks	Weightage
1	1. The Ever-Evolving World of Science	3	4	10%
2	2. Exploring Substances: Acidic, Basic, and Neutral	5	8	20%
3	3. Electricity: Circuits and Its Components	7	12	30%
4	4. The World of Metals and Non-Metals	3	5	13%
5	5. Changes Around Us: Physical and Chemical	4	8	20%
6	6. Adolescence: A Stage of Growth and Change	2	3	8%
Total		24	40	100%

D) Weightage to Difficulty Level

Difficulty Level	Questions	Marks	Percentage (%)
Easy	10	12	30%
Average	10	16	40%
Difficult	4	12	30%
Total	24	40	100%

BLUEPRINT (SA-1) - 7TH STANDARD SCIENCE [6 CHAPTERS]

Subject: Science (English Medium)	Class: 7th Standard	Total Marks: 40	Number of Questions: 24
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Sl.	Lessons / Units	Knowledge			Understanding			Application			Skill		Total	
		Obj(1)	VSA(2)	LA(4)	Obj(1)	VSA(2)	LA(4)	Obj(1)	VSA(2)	LA(4)	Obj(1)	VSA(2)	Qns	Marks
1	1. The Ever-Evolving World of Science	1(1)	1(2)	-	1(1)	-	-	-	-	-	-	-	3	4
2	2. Exploring Substances: Acidic, Basic, and Neutral	1(1)	1(2)	-	1(1)	1(2)	-	-	1(2)	-	-	-	5	8
3	3. Electricity: Circuits and Its Components	-	-	-	4(4)	1(2)	-	-	1(2)	1(4)	-	-	7	12
4	4. The World of Metals and Non-Metals	1(1)	1(2)	-	-	1(2)	-	-	-	-	-	-	3	5
5	5. Changes Around Us: Physical and Chemical	1(1)	-	-	1(1)	1(2)	-	-	-	-	-	-	4	8
6	6. Adolescence: A Stage of Growth and Change	-	-	-	1(1)	1(2)	-	-	-	-	-	-	2	3
Objective-wise Total Marks		10 (25%)			18 (45%)			8 (20%)			4 (10%)		24	40

Note: Numbers outside brackets denote question count; numbers inside brackets indicate allotted marks. Obj = 1 Mark, VSA = 2 Marks, LA = 4 Marks.

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Question-wise Analysis Sheet (SA-1)

Class: 7th Standard

Subject: Science

Total Questions: 24

Total Marks: 40

Q.No.	Lesson Name	Objective	Specification	Marks	Question Type	Difficulty	Time (m)
1	1. The Ever-Evolving World of Science	Knowledge	Defines	1	Objective	Easy	2
2	4. The World of Metals and Non-Metals	Knowledge	Recalls	1	Objective	Easy	2
3	5. Changes Around Us: Physical and Chemical	Knowledge	Defines	1	Objective	Easy	2
4	2. Exploring Substances: Acidic, Basic, and Neutral	Knowledge	Recalls	1	Objective	Easy	2
5	1. The Ever-Evolving World of Science	Understanding	Identifies	1	Objective	Easy	2
6	2. Exploring Substances: Acidic, Basic, and Neutral	Understanding	Identifies	1	Objective	Easy	2
7	5. Changes Around Us: Physical and Chemical	Understanding	Identifies	1	Objective	Easy	2
8	6. Adolescence: A Stage of Growth and Change	Understanding	Identifies	1	Objective	Easy	2
9	3. Electricity: Circuits and Its Components	Understanding	Matches	1	Objective	Easy	1
10	3. Electricity: Circuits and Its Components	Understanding	Matches	1	Objective	Easy	1
11	3. Electricity: Circuits and Its Components	Understanding	Matches	1	Objective	Easy	1
12	3. Electricity: Circuits and Its Components	Understanding	Matches	1	Objective	Easy	1
13	1. The Ever-Evolving World of Science	Knowledge	Lists	2	Very Short Answer	Easy	5
14	2. Exploring Substances: Acidic, Basic, and Neutral	Understanding	Differentiates	2	Very Short Answer	Average	5
15	2. Exploring Substances: Acidic, Basic, and Neutral	Knowledge	Defines	2	Very Short Answer	Average	5
16	3. Electricity: Circuits and Its Components	Understanding	Differentiates	2	Very Short Answer	Easy	5
17	4. The World of Metals and Non-Metals	Understanding	Defines & Exemplifies	2	Very Short Answer	Average	5
18	5. Changes Around Us: Physical and Chemical	Understanding	Differentiates	2	Very Short Answer	Average	5
19	2. Exploring Substances: Acidic, Basic, and Neutral	Application	Explains	2	Very Short Answer	Average	5
20	3. Electricity: Circuits and Its Components	Understanding	Differentiates	2	Very Short Answer	Easy	5
21	4. The World of Metals and Non-Metals	Application	Gives Reason	2	Very Short Answer	Average	5
22	6. Adolescence: A Stage of Growth and Change	Understanding	Defines	2	Very Short Answer	Easy	5

Q.No.	Lesson Name	Objective	Specification	Marks	Question Type	Difficulty	Time (m)
23	3. Electricity: Circuits and Its Components	Application	Explains Components	4	Long Answer	Difficult	10
24	5. Changes Around Us: Physical and Chemical	Skill	Explains Experiment	4	Long Answer	Average	10
Total				40 Marks	24 Questions	-	90 Mins

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Summative Assessment - 1 (SA-1) 2026-27 | Subject: Science (English Medium)

Class: 7th Standard

Time: 90 Minutes

Max Marks: 40

I. Answer the following questions in one sentence each:

4 × 1 = 4

1. What is Science?
2. Which is the only metal found in liquid state at room temperature?
3. What is a physical change?
4. From which natural organism is litmus paper extracted?

II. Choose and write the correct alternative from the given options:

4 × 1 = 4

5. In science, an established theory or law undergoes change when:
(A) Society rejects it (B) New and more precise evidence is found (C) Scientists get bored (D) Old textbooks are lost
6. In which of the following solutions does blue litmus paper turn red?
(A) Sodium bicarbonate solution (B) Calcium hydroxide solution (C) Potassium hydroxide solution (D) Hydrochloric acid
7. Which of the following is an example of a chemical change?
(A) Melting of ice (B) Dissolving sugar in water (C) Digestion of food (D) Melting of wax
8. The enlarged voice box visible in the throat region of adolescent boys is called:
(A) Esophagus (B) Adam's Apple (C) Trachea (D) Windpipe

III. Match the items in Column 'A' with Column 'B':

4 × 1 = 4

Column 'A'	Column 'B'
9. Electric Cell	(A) Source of electrical energy in a circuit
10. Battery	(B) Combination of two or more electric cells
11. Switch	(C) Used to open or close the electric circuit
12. Electric Bulb	(D) Glows to emit light when current flows

IV. Answer the following questions in 2-3 sentences each:

10 × 2 = 20

13. State the main steps of the scientific method.
14. State two differences between acids and bases.
15. What is a neutralization reaction? Give one example.
16. Differentiate between electrical conductors and insulators with examples.
17. Define malleability and ductility with examples.
18. Write two main differences between physical and chemical changes.
19. Why is an antacid tablet taken when suffering from acidity?
20. State the difference between a closed circuit and an open circuit.
21. Why are sodium and potassium metals stored under kerosene?
22. What is adolescence? What is its normal age span?

V. Answer the following questions in detail (4-5 sentences):

2 × 4 = 8

23. Name four major components needed to construct a simple electric circuit and explain their functions. Why are wires covered with plastic?
24. Describe the experiment of passing carbon dioxide into lime water. Write the chemical equation and explain the reaction.

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Model Answers & Scoring Key (Part - I)

Class: 7th Standard

Subject: Science

Questions 1 to 12 (Objective & 1-Mark Items)

Q.No.	Expected Model Answers / Value Points	Marks
1	What is Science? Model Answer: Science is a systematic body of knowledge gained through observation, experimentation, and logical reasoning.	1 Mark
2	Which is the only metal found in liquid state at room temperature? Model Answer: Mercury.	1 Mark
3	What is a physical change? Model Answer: A change in which a substance undergoes a change in physical shape, size, or state without forming any new chemical substance.	1 Mark
4	From which natural organism is litmus paper extracted? Model Answer: Lichens.	1 Mark
5	In science, an established theory or law undergoes change when: Model Answer: B) New and more precise evidence is found	1 Mark
6	In which of the following solutions does blue litmus paper turn red? Model Answer: D) Hydrochloric acid	1 Mark
7	Which of the following is an example of a chemical change? Model Answer: C) Digestion of food	1 Mark
8	The enlarged voice box visible in the throat region of adolescent boys is called: Model Answer: B) Adam's Apple	1 Mark
9	Electric Cell Model Answer: Source of electrical energy in a circuit	1 Mark
10	Battery Model Answer: Combination of two or more electric cells	1 Mark
11	Switch Model Answer: Used to open or close the electric circuit	1 Mark
12	Electric Bulb Model Answer: Glows to emit light when current flows	1 Mark

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Model Answers & Scoring Key (Part - II)

Class: 7th Standard

Subject: Science

Questions 13 to 24 (Descriptive 2 & 4 Marks Items)

Q.No.	Expected Model Answers / Value Points	Marks
13	State the main steps of the scientific method. Model Answer / Evaluation Criteria: 1. Observation and questioning 2. Formulating a testable hypothesis 3. Conducting experiments 4. Data analysis and drawing conclusions.	2 Marks
14	State two differences between acids and bases. Model Answer / Evaluation Criteria: Acids have a sour taste and turn blue litmus paper red. Bases have a bitter taste, feel soapy to touch, and turn red litmus paper blue.	2 Marks
15	What is a neutralization reaction? Give one example. Model Answer / Evaluation Criteria: The chemical reaction between an acid and a base to form salt and water with the release of heat is called neutralization. Example: $\text{HCl} + \text{NaOH} \rightarrow \text{NaCl} + \text{H}_2\text{O}$.	2 Marks
16	Differentiate between electrical conductors and insulators with examples. Model Answer / Evaluation Criteria: Conductors allow electric current to pass through them freely (e.g., copper wire, iron nail). Insulators block electric current from flowing (e.g., rubber, plastic).	2 Marks
17	Define malleability and ductility with examples. Model Answer / Evaluation Criteria: Malleability: The property of metals to be hammered into thin flat sheets (e.g., aluminium foil). Ductility: The property of metals to be drawn into long, thin wires (e.g., copper wire).	2 Marks
18	Write two main differences between physical and chemical changes. Model Answer / Evaluation Criteria: Physical changes produce no new substance and are usually reversible (e.g., melting ice). Chemical changes always form new substances and are irreversible and permanent (e.g., rusting iron).	2 Marks
19	Why is an antacid tablet taken when suffering from acidity? Model Answer / Evaluation Criteria: Our stomach secretes excess hydrochloric acid during acidity. Antacids contain mild bases (like magnesium hydroxide) that neutralize excess acid, relieving discomfort.	2 Marks
20	State the difference between a closed circuit and an open circuit. Model Answer / Evaluation Criteria: In a closed circuit, the switch is ON, providing an unbroken path; current flows and the bulb glows. In an open circuit, the switch is OFF, breaking the path; no current flows.	2 Marks
21	Why are sodium and potassium metals stored under kerosene? Model Answer / Evaluation Criteria: Sodium and potassium are vigorously reactive metals that react violently with atmospheric oxygen and moisture, catching fire. Hence, they are kept immersed in kerosene.	2 Marks
22	What is adolescence? What is its normal age span? Model Answer / Evaluation Criteria: Adolescence is the transitional phase of rapid physical and psychological growth between childhood and adulthood. The World Health Organization defines it as the age group between 10 and 19 years.	2 Marks
23	Name four major components needed to construct a simple electric circuit and explain their functions. Why are wires covered with plastic? Model Answer / Evaluation Criteria: Four Components: 1. Electric Cell: Supplies necessary electrical energy. 2. Connecting Wires: Carries electric current throughout the loop. 3. Switch: Controls current by making or breaking the connection.	4 Marks

Q.No.	Expected Model Answers / Value Points	Marks
	4. Electric Bulb: Converts electrical energy into visible light. Plastic Coating: Plastic is an electrical insulator that protects users against dangerous electric shocks and prevents short circuits.	
24	Describe the experiment of passing carbon dioxide into lime water. Write the chemical equation and explain the reaction. Model Answer / Evaluation Criteria: Procedure: In a test tube, mix baking soda with lemon juice. Direct the liberated gas through a glass delivery tube into a test tube containing freshly prepared lime water. Observation: The lime water turns milky white. Reason: Carbon dioxide reacts with calcium hydroxide to form insoluble calcium carbonate precipitate. Equation: $\text{CO}_2 + \text{Ca(OH)}_2 \rightarrow \text{CaCO}_3 + \text{H}_2\text{O}$.	4 Marks