

SAMAGRA SHIKSHA KERALA
SUMMATIVE ASSESSMENT - I 2026-27
BASIC SCIENCE

Class : VIII

Time : 2 Hour

Total Score : 60

Instructions

- The first 15 minutes is cool-off time. Use this time to read and understand the questions carefully and plan your answers.
- The exam must be written in the following order: Physics, Chemistry, and Biology. Each subject is allotted 40 minutes. After completing each subject, the answer sheet must be handed over to the teacher.
- While writing answers, consider both score and time.
- For questions with choice, attempt only one of the given options.

PHYSICS

Time : 40 minute

Total Score : 20

SECTION A

Answer the questions 1 and 2. Each carries 1 score.

(2 x 1 = 2)

1. Which is correct method of writing a unit? (1)
(M, cm, CM, Cm)
2. Statement(A): The International Standard unit (SI unit) of distance is metre.
Statement (B): Distance is the length of the path travelled by an object in unit time. (1)
 - (a) Both A and B are correct, and B is the correct explanation of A.
 - (b) Both A and B are correct, but B is not the correct explanation of A.
 - (c) A is correct, but B is incorrect.
 - (d) A is incorrect, but B is correct.

SECTION B

Answer all questions from 3 to 8. Questions 3 and 8 have choices.

Each question carries 2 score.

(6 x 2 = 12)

3. A) When the entire water in a bucket was measured using different tumblers, the numerical values obtained were different.
 - a) Explain the reason for this difference. (1)
 - b) Establish the correct method of measuring liquids. (1)

OR

3. B) Substantiate that the length is the only fundamental physical quantity used to find the volume of a rectangular measuring jar. (2)
4. When a plastic comb is rubbed on dry hair, it can attract small pieces of paper kept at a short distance away.
 - a) Write down the type of force between the comb and the paper. (1)
 - b) Explain why this force is called by this name. (1)

5. Observe some of the activities given below: (2)

Activity A: Squeezing a closed toothpaste tube.

Activity B: Catching a cricket ball coming through the air.

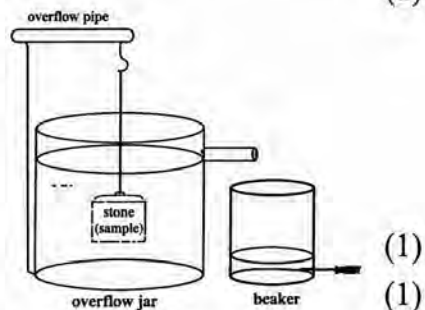
Explain the changes produced by the force on objects in these activities.

6. A cardboard box is filled with sawdust and its mass is measured. Later, the sawdust is removed and the box is filled with sand. Even though the volume is the same, there is a large difference in mass.

- Which physical quantity is responsible for this difference? (1)
- Write down the equation to determine it. (1)

7. An overflow jar is filled with water. When a stone was completely immersed into it, the quantity of water overflowed was 0.02 L.

- Which physical quantity of the stone is indicated by 0.02 L here? (1)
- How many cubic centimetre is this? (1)



8. A) A child says that a wooden plank kept in a moving lorry is simultaneously at rest and in motion. Explain how an object can be in both these states at the same time. (2)

OR

8. B) An object is tied firmly to a tree. Describe how you can argue that this object is in motion. (2)

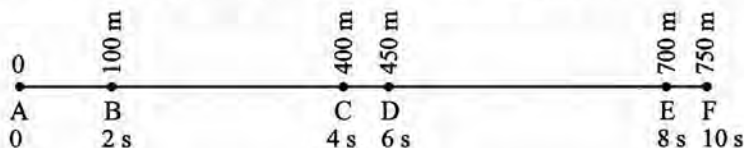
SECTION C

Answers questions from 9 to 10. Question 10 has choice. Each question carries 3 scores. (2 x 3 = 6)

9. A student wants to determine the thickness of a sheet of paper of his science textbook using a 15 cm scale from his instrument box.

- What do you mean by least count? (1)
- What is the least count of this scale? (1)
- Can the thickness of a paper be measured directly using this scale? Why? (1)

10. A) The path and the time taken by an object starting from A to reach F are depicted. Check the interval of travel from A to F and find out whether this object has uniform speed or non-uniform speed. Justify your answer by calculation. (3)



OR

10. B) A track of length 400 m is depicted. If a person ran three times along this track in 5 minutes:

- What is the distance travelled by the person? (1)
- What is the average speed of the person? (2)



CHEMISTRY

Time : 40 minute

Score : 20

Answer all questions from 1 to 2. 1 score each.

(2 x 1 = 2)

1. Which is the correct statement given below? (1)

- a) Liquids have definite shape.
- b) Gases have definite volume.
- c) Melting of wax is a chemical change.
- d) Rusting of iron is a chemical change.

2. Match the following.

1) Antoine Lavoisier	a) Atomic mass
2) Dobereiner	b) Metals and nonmetals
3) Newlands	c) Triads
4) Mendeleev	d) Law of octaves

The correct match is.

(1)

- A) (1-c), (2-a), (3-d), (4-b)
- B) (1-b), (2-c), (3-d), (4-a)
- C) (1-a), (2-c), (3-b), (4-d)
- D) (1-d), (2-b), (3-c), (4-a)

Two questions from 3 to 8 have choice. Each question carries 2 scores. (6 x 2 = 12)

3. Take quicklime in a steel cup. Add some water into it. Touch the cup after sometime.

- a) What do you feel? (1)
- b) What is the reason? (1)

4. (A) Silver nitrate solution is mixed with sodium chloride solution in a watch glass and is placed in sunlight.

- a) Write the observation. (1)
- b) What is the reason for the change? (1)

OR

- (B) (a) What are the reactants required for photosynthesis? (1)
- (b) To which category does this reaction belong? (1)

5. a) What is the energy change that takes place in a dry cell? (1)

b) What is the energy change during electrolysis? (1)

6. Which are the statements applicable to John Dalton's atomic theory? (2)

- a) All matter is made up of minute particles called atoms.
- b) An atom can be divided during a chemical reaction.
- c) Atoms of different elements differ in their size, property and mass.
- d) All atoms of an element differ in their size, property and mass.

7. (A) Complete the table. (2)

Element	Basis of nomenclature	Symbol
Indium	---- (a) ----	In
---- (b) ----	Rutherford - Scientist	Rf
Europium	---- (c) ----	Eu
---- (d) ----	Planet	Np

OR

- (B) Complete the table using the symbols given in the bracket. (2)

[S, Al, K, Au, Na, Cu]

Element	Symbol
Aluminium	
Sulphur	
Gold	
Potassium	

8. What is the difference between $2N$ and N_2 ? (2)

One question from 9 to 10 has choice. Each question carries 3 scores. (2 x 3 = 6)

9. Silver is coated on an iron bangle.
- To which terminal of the battery is iron bangle connected? (1)
 - Which is the solution used here? (1)
 - Is this an electrochemical reaction? Why? (1)
10. (A) Find the number of molecules and total number of atoms present in $3C_2H_6$. (3)

OR

- (B) Calcium carbonate ($CaCO_3$) decomposes to form calcium oxide (CaO) and carbon dioxide (CO_2).
- What is the reactant in this reaction? (1)
 - What are the products? (1)
 - Write the chemical equation of the above reaction. (1)

Answer the questions 1 & 2. Each question carries 1 score.

(2 x 1 = 2)

1. Evaluate the given statements and choose the correct answer related to the theory of chemical evolution. (1)

- i) The fundamental units responsible for the origin of life can form from simple gases.
- ii) Life originated elsewhere in the universe and was accidentally transported to Earth.
- iii) Sydney Fox proved that molecules similar to proteins can be artificially synthesised.

a) i, ii correct b) i, ii, iii correct c) i, iii correct d) i only correct

2. Analyse the information paired in columns A and B and choose the correct answer. (1)

A. Smart Farming	B. Features
P- Hydroponics	i- Water and nutrients are delivered to the roots that grow into the air.
Q- Internet of Things	ii. By sharing images and information related to crops and find solutions to problems.
R- Aeroponics	iii- Plants are grown in nutrient solutions.
S- Artificial Intelligence	iv- With the help of sensors, moisture, fertility and pest infestation are identified and a problem solving system is prepared.

- a) P-i, Q-ii, R-iii, S-iv
- b) P-iii, Q-iv, R-i, S-ii
- c) P-ii, Q-iii, R-i, S-iv
- d) P-iii, Q-iv, R-ii, S-i

Answer the questions 3 to 8. Each question carries 2 scores.

(6 x 2 = 12)

3. The title of the leaflet published by the Department of Agriculture is given.

“Adopt integrated farming for better yields.”

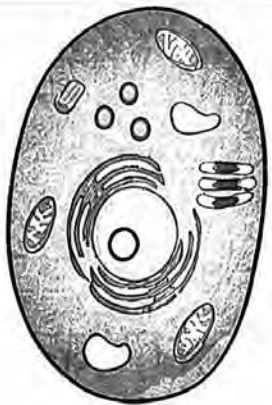
Is this idea suitable? Evaluate.

(2)

4. Two types of cells are given based on the presence of nuclear membrane. Fill in the blanks suitably. (2)

Hints:

A, B: Name of the cell, C, D: Features

A:	B:
	
• A few cell organelles.	• Many cell organelles.
C:	D:

5. A. Answer the given questions related to GM crops.
- The use of pesticides can be reduced by developing GM crops that are resistant to pests. Evaluate the statement. (1)
 - Critically evaluate how crops produced through tissue culture differ from GM crops. (1)

OR

- B. **“Integrated pest management is an important part of sustainable agriculture.”**
Evaluate the statement. (2)
6. A. How are plant nutrients classified based on their requirements? Explain with examples. (2)

OR

- B. Explain the importance of soil testing and fertilisation in plant growth. (2)
7. Analyse the illustration and write the stages in the formation of mitochondria. (2)



8. There are many support systems currently available to attract the new generation into agriculture. What are the support systems available? (2)

Answer the questions 9 and 10. Each question carries 3 scores. (3 x 2 = 6)

9. Answer the questions related to chemical evolution.
- What were the conditions that helped the formation of simple organic molecules in the early Earth? (2)

- b) Does the Urey-Miller experiment provide direct evidence for chemical evolution? Why? (1)

10. A. Answer the questions related to application of fertiliser.

- a) "Excessive use of artificial fertilisers is harmful." What are the advantages of nano fertilisers over artificial fertilisers? (1)
- b) What are the limitations of organic fertilisers over other fertilisers? (1)
- c) What is the role of biofertilisers in increasing the nutrients in the soil? (1)

OR

B.

- a) Methods like drip irrigation and wick irrigation are important in areas where water availability is low. Evaluate the statement. (2)
- b) Which innovative farming method would be helpful in solving the problem that the child in the given picture is thinking about? Write an advantage of this method. (1)

