

KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD
FIRST SUMMATIVE ASSESSMENT (SA-1) / HALF-YEARLY EXAMINATION — 2026-27

Class: X (SSLC) Subject: Science

Time: 3 Hours 15 Minutes (including 15 minutes for reading the question paper)

Max. Marks: 80

General Instructions:

- This question paper has five parts: A, B, C, D and E. All parts are compulsory.
- Figures in square brackets [] indicate the marks allotted to that question.
- Draw well-labelled diagrams wherever necessary.
- Write balanced chemical equations wherever applicable.
- SA-1 syllabus covered in this paper: Chemical Reactions and Equations; Acids, Bases and Salts; Metals and Non-metals; Carbon and its Compounds; Life Processes; Control and Coordination.

PART – A

Answer ALL the questions. Each question carries 1 mark.

1. Rusting of iron is an example of a/an: [1]
 - (a) physical change
 - (b) oxidation reaction
 - (c) reduction reaction
 - (d) acid-base reaction
2. The pH of a neutral solution is: [1]
 - (a) 0
 - (b) 7
 - (c) 14
 - (d) greater than 7
3. Which of the following is commonly used as an antacid? [1]
 - (a) Sodium hydroxide
 - (b) Milk of magnesia
 - (c) Hydrochloric acid
 - (d) Sodium chloride
4. Metals react with dilute acids to produce: [1]
 - (a) oxygen gas
 - (b) hydrogen gas
 - (c) chlorine gas
 - (d) nitrogen gas
5. The most reactive metal among the following is: [1]
 - (a) Copper
 - (b) Gold
 - (c) Sodium
 - (d) Silver
6. The general formula for the homologous series of alkanes is: [1]
 - (a) C_nH_{2n+2}
 - (b) C_nH_{2n}
 - (c) C_nH_{2n-2}
 - (d) C_nH_{2n+1}
7. Which of the following is a means of vegetative propagation in plants? [1]
 - (a) Seed

- (b) Spore
- (c) Eye/bud of potato
- (d) Zygote

8. The hormone responsible for increasing heartbeat during an emergency ('fight or flight' response) is: [1]

- (a) Insulin
- (b) Adrenaline
- (c) Thyroxine
- (d) Testosterone

PART – B

Answer ALL the questions. Each question carries 2 marks.

1. Write a balanced chemical equation for the reaction between zinc metal and dilute sulphuric acid. [2]
2. What is a combination reaction? Give one example with a balanced equation. [2]
3. Why should a magnesium ribbon be cleaned with sandpaper before burning it in air? [2]
4. State two physical properties of metals that make them suitable for making cooking utensils. [2]
5. Write the structural formulae of ethanol and ethanoic acid. [2]
6. What is a homologous series? Give one example. [2]
7. Name the organ where complete digestion of food takes place in humans. Why is it considered so? [2]
8. Mention one difference between a nervous response and a hormonal (chemical) response in the human body. [2]

PART – C

Answer ALL the questions. Each question carries 3 marks.

1. What is a redox reaction? Identify the substance oxidised and the substance reduced in the reaction: $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$. [3]
2. Describe the reaction of quicklime with water. Name the type of reaction and write the balanced equation. [3]
3. Why do ionic compounds have high melting and boiling points? Explain briefly. [3]
4. Explain the process of electrolytic refining of an impure metal (in brief). [3]
5. How would you distinguish between ethanol and ethanoic acid using two simple chemical tests? [3]
6. Explain the process of photosynthesis, mentioning the raw materials required, the site of the reaction and the balanced equation. [3]
7. List, in correct sequence, the main parts of the human alimentary canal. [3]
8. Distinguish between tropic movement and nastic movement in plants, with one example of each. [3]

PART – D

Answer ALL the questions. Each question carries 4 marks.

1. With the help of a labelled diagram, describe the process of electrolytic refining of copper. [4]
2. What are esters? Describe, with a chemical equation, how an ester is prepared in the laboratory. State one use of esters. [4]
3. Explain, with the help of a flow diagram, the pathway of a reflex arc, taking the example of a person accidentally touching a hot object. [4]

4. Give reasons: (i) Sodium chloride does not conduct electricity in the solid state but does so in the molten/aqueous state. (ii) Ionic compounds are generally soluble in water. (iii) Ionic compounds have high melting points. (iv) Ionic compounds are brittle. [4]
5. Explain double displacement reaction with a suitable example. Also explain what is meant by a precipitation reaction, with an example. [4]
6. Name the three main parts of the human brain and write one function of each. [4]

PART – E

Answer the following question. It carries 8 marks.

1. Explain the reactivity series of metals. Describe, with an activity involving displacement reactions, how metals can be arranged in order of their reactivity, and explain how this series is useful in understanding the extraction of metals. [8]

***** END OF QUESTION PAPER *****