**KENYA JUNIOR SCHOOL EDUCATION ASSESSMENT (KJSEA)**

**GRADE 9: INTEGRATED SCIENCE (Practical)**  
**CODE: 010 YEAR: 2025 TIME: 2 HOURS**

**Candidate’s Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Assessment Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**School Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. School Code: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**Candidate’s Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**INSTRUCTIONS TO CANDIDATES:**

1. Write the **name** and **code of your school** in the spaces provided above.
2. **Sign** and write the **date** of the assessment in the spaces provided above.
3. This paper consists of **2** questions.
4. Answer **BOTH** questions in the spaces provided on this **QUESTION PAPER**.
5. Do **NOT** remove any page from this question paper.
6. Answer the questions in English.

**FOR OFFICIAL USE ONLY.**

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| **For Official Use Only** |  |  |  |
| **Task** | **Task 1** | **Task 2** | **TOTAL** |
| **Question** | 1 | 2 | 3QUESTIONS |
| **Maximum Score** | 20 | 10 | 30 MARKS |
| **Candidate’s Score** |  |  |  |

*This paper consists of 6 printed pages. Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.*

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**Task 1 (20 marks) – Chemistry Experiment**

**Experiment: Preparation and collection of oxygen gas**

You are provided with:

1. Hydrogen peroxide solution in a beaker
2. Manganese (IV) oxide as a catalyst
3. A test tube, delivery tube, trough of water and gas jar

**Procedure:**

1. Place some manganese (IV) oxide in the test tube.
2. Add hydrogen peroxide solution into the test tube.
3. Collect the gas produced over water in the gas jar.
4. Test the collected gas using a glowing splint.

**Questions:**  
a. Write a balanced chemical equation for the reaction. (3 marks)

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b. State the role of manganese (IV) oxide in this experiment. (2 marks)  
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\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_d. State two physical properties of oxygen gas. (2 marks)  
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\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_f. If 60 cm³ of oxygen is collected in 30 seconds, calculate the rate of production of oxygen. (3 marks)

g. State two precautions that should be observed during this experiment. (2 marks)  
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**Task 2 (10 marks) – Biology Experiment**

**Experiment: Osmosis using a potato**

You are provided with:

1. Two potato tubers
2. A concentrated sugar solution
3. Distilled water
4. Two beakers

**Procedure:**

1. Peel the two potato tubers and cut each into equal-sized cylinders.
2. Measure and record their initial lengths.
3. Place one potato cylinder in a beaker of distilled water and the other in concentrated sugar solution.
4. Leave for 30 minutes, then remove, dry, and measure their final lengths.

**Questions:**  
a. State the variable being tested in this experiment. (1 mark)  
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e. Mention two practical applications of osmosis in everyday life. (2 marks)  
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