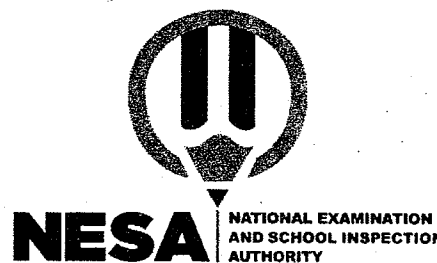


Chemistry III

015

04/ 08 / 2022 08:30 AM – 10:00 AM



ADVANCED LEVEL NATIONAL EXAMINATIONS, 2021-2022

SUBJECT: CHEMISTRY III

PAPER III: CHEMISTRY PRACTICAL EXAMINATION

COMBINATIONS:

- BIOLOGY-CHEMISTRY-GEOGRAPHY (**BCG**)
- MATHEMATICS-CHEMISTRY-BIOLOGY (**MCB**)
- PHYSICS-CHEMISTRY-BIOLOGY (**PCB**)
- PHYSICS-CHEMISTRY-MATHEMATICS (**PCM**)

DURATION: 3 HOURS

INSTRUCTIONS:

- 1) Write your name and index number on the answer booklet as written on your registration form and **DO NOT** write your names and index number on additional answer sheets if provided
- 2) Please read carefully before you start and make sure that you have all the apparatus and chemicals that you may need.
- 3) This paper consists of **one** question.
- 4) Answer the question in this paper and record your answers in the spaces provided.
- 5) Non-programmable scientific calculators may be used.

You are provided with a substance **A** which contains one cation and one anion. You are required to identify the cation and the anion in **A**. Carry out the following tests on **A** and record your observations and deductions in the table below. Identify any gases evolved.

| | Test | Observation | Deduction |
|----------|--|--------------------|------------------|
| 1 | Heat strongly 2 spatulas of A in a test tube and identify any gas evolved using litmus paper and limewater. (9 marks) | | |
| 2 | Dissolve 4 spatulas of A in approximately 25 cm ³ of distilled water and divide this into 4 equal portions. | ----- | ----- |
| | i) To the first portion add drops of NaOH solution dropwise until in excess. (4 marks) | | |
| | ii) To the second portion add few drops of ammonia solution dropwise until in excess. (2 marks) | | |
| | iii) To the third part add few drops of potassium hexacyanoferrate solution. (2 marks) | | |
| | iv) To the fourth portion, add dilute sulphuric acid followed by KMnO ₄ solution and heat slowly. Test the gas by using blue litmus paper and lime water. (5 marks) | | |

v) What is the role of KMnO₄ in this test? **(1 mark)**

vi) Identify the cation in A. **(1 mark)**

vii) Identify the anion in A. **(1 mark)**