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**THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL OF TANZANIA
ADVANCED CERTIFICATE OF SECONDARY EDUCATION
EXAMINATION 2020**

132/3A

**CHEMISTRY 3A
ACTUAL PRACTICAL A**

24 HOURS ADVANCE INSTRUCTIONS

1.0 IMPORTANT

- 1.1 GREAT CARE MUST BE TAKEN **NOT** TO DIVULGE THESE INSTRUCTIONS TO BOTH CANDIDATES AND TO UNAUTHORIZED PERSONS EITHER DIRECTLY OR INDIRECTLY.
- 1.2 MAKE SURE THAT THE CANDIDATES ARE PROVIDED WITH CHEMICALS AND APPARATUSES AS INDICATED IN THESE ADVANCE INSTRUCTIONS ONLY AND **NOT** OTHERWISE.

2.0 PRAPERATION OF CHEMICALS AND APPARATUSES

2.1 Question 1

- Prepare 0.02 M of potassium permanganate and label it **C2**. Allow 150 cm³ per candidate.
- Prepare 0.05 M sodium oxalate (Na₂C₂O₄) solution and label it **C1**. Provide each candidate with 80 cm³ of the solution.
- Prepare 0.085 M ferrous ammonium sulphate (FeSO₄(NH₄)₂SO₄·6H₂O) solution and label it **C3**. Provide each candidate with 50 cm³ of the solution.
- Prepare 1 M sulphuric acid (H₂SO₄) and label it **C4**. Provide 50 cm³ of the solution per candidate.
- Provide each candidate with a thermometer (0 °C – 100 °C).
- Provide each candidate with a 10 cm³ measuring cylinder.
- Provide each candidate with 1 burette, 1 tripod stand, 1 wire gauze, 1 white tile, 1 pipette (20 cm³ or 25 cm³), 2 titration flasks, 1 retort stand and a clamp.
- Provide each candidate with pipette filler.
- Provide a pyrex beaker (250 or 300 cm³).
- Prepare heat source or burner for sharing in the maximum ratio of 1:4.

2.2 Question 2

- Prepare 0.02 M KMnO₄ and label it **T1**. Allow 80 cm³ per candidate.
- Prepare acidified 0.05 M oxalic acid with 0.5 M H₂SO₄ and label it **T2**. Allow 80 cm³ per candidate.
- Provide each candidate with a stop watch.

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- Provide each candidate with a 50 cm³ pyrex beaker.
- Provide each candidate with a 250 cm³ beaker.
- Provide each candidate with a 10 cm³ measuring cylinder.
- Provide each candidate with 2 boiling test tubes.
- Provide each candidate with a thermometer (0 °C – 100 °C).
- Prepare a heat source or burner for sharing in the maximum ratio of 1:4.
- Provide each candidate with a tripod stand.
- Provide each candidate with 2 test tube holders.

2.3 Question 3

- Prepare a mixture of equal amount of iron(III) chloride (FeCl₃) and zinc carbonate (ZnCO₃) and label it U. Allow 4 g per candidate.
- Provide about 300 cm³ distilled water per candidate.
- Provide centrifuge for sharing in a ratio of 1:2 or provide each candidate with a filter paper and a funnel.
- Provide sodium hydroxide solution, dilute nitric acid, silver nitrate, concentrated hydrochloric acid, ammonia solution, potassium ferrocyanide, potassium thiocyanate or ammonium thiocyanate as bench reagents.
- Prepare heat source or burner for sharing in the maximum ratio of 1:4.

3.0 NOTE TO EXAMINATIONS SUPERVISOR AND LABORATORY TECHNICIAN/HEAD OF CHEMISTRY DEPARTMENT

Laboratory technician or Head of Chemistry Department should perform the experiments in Question 1 and 2 during the **last 30 minutes of the last session of the examination**. The experimental data must be recorded in the form, provided in page 3 of these instructions and be enclosed in the envelop **together with the candidates' scripts** (Answer booklets) for submission to the Examinations Council.

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Teacher's Experimental Results and Declaration Form

132/3A – CHEMISTRY 3A

(a) Experimental Results

Question 1

Part I

(i) Volume of pipette used 20 cm³/25 cm³ (cancel which is not applicable).

(ii) Burette readings:

Experiment	Volume used (cm ³)
1 st titration	
2 nd titration	
3 rd titration	

Average volume =

Part II

(i) Volume of pipette used 20 cm³/25 cm³ (cancel which is not applicable).

(ii) Burette readings:

Experiment	Volume used (cm ³)
1 st titration	
2 nd titration	
3 rd titration	

Average volume =

Question 2

Temperature (°C)	Time (Sec)
50	
60	
70	
80	

(b) Declaration (Chemistry teachers/laboratory technician)

I from Centre Number and Name declare that, I have prepared all the chemicals and apparatuses as indicated in the 24 Hour Advance Instructions and that the confidentiality and security of the examination has been maintained.

Signature: Date:

Mobile phone Number (s):

(c) Supervisor Information

Centre Number and name:

Name of the Supervisor:

Signature: Date:

Mobile Phone Number (s):