CONFIDENTIAL

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 cm^3 per candidate.
- Prepare 0.05 M sodium oxalate ($Na_2C_2O_4$) solution and label it **C1**. Provide each candidate with 80 cm^3 of the solution.
- Prepare 0.085 M ferrous ammonium sulphate ($FeSO_4(NH_4)_2SO_4.6H_2O$) solution and label it **C3**. Provide each candidate with 50 cm^3 of the solution.
- Prepare 1 M sulphuric acid (H_2SO_4) and label it **C4**. Provide 50 cm^3 of the solution per candidate.
- Provide each candidate with a thermometer (0 °C – 100 °C).
- Provide each candidate with a 10 cm^3 measuring cylinder.
- Provide each candidate with 1 burette, 1 tripod stand, 1 wire gauze, 1 white tile, 1 pipette (20 cm^3 or 25 cm^3), 2 titration flasks, 1 retort stand and a clamp.
- Provide each candidate with pipette filler.
- Provide a pyrex beaker (250 or 300 cm^3).
- Prepare heat source or burner for sharing in the maximum ratio of 1:4.

2.2 Question 2

- Prepare 0.02 M $KMnO_4$ and label it **T1**. Allow 80 cm^3 per candidate.
- Prepare acidified 0.05 M oxalic acid with 0.5 M H_2SO_4 and label it **T2**. Allow 80 cm^3 per candidate.
- Provide each candidate with a stop watch.

- Provide each candidate with a 50 cm^3 pyrex beaker.
- Provide each candidate with a 250 cm^3 beaker.
- Provide each candidate with a 10 cm^3 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 ($FeCl_3$) and zinc carbonate ($ZnCO_3$) and label it **U**. Allow 4 g per candidate.
- Provide about 300 cm^3 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.

THE NATIONAL EXAMINATIONS COUNCIL OF TANZANIA

Teacher's Experimental Results and Declaration Form

132/3A – CHEMISTRY 3A

(a) Experimental Results

Question 1

Part I

(i) Volume of pipette used 20 cm^3/25 cm^3 (cancel which is not applicable).

(ii) Burette readings:

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

Average volume = ...

Part II

(i) Volume of pipette used 20 cm^3/25 cm^3 (cancel which is not applicable).

(ii) Burette readings:

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