

**CONFIDENTIAL**

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

**NOVEMBER 2016**

**032/2A**

**CHEMISTRY 2A  
(ACTUAL PRACTICAL A)**

**ADVANCE INSTRUCTIONS**

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**1.0 IMPORTANT**

- 1.1 GREAT CARE MUST BE TAKEN NOT TO DIVULGE THESE INSTRUCTIONS TO BOTH CANDIDATES AND UNAUTHORIZED PERSONS EITHER DIRECTLY OR INDIRECTLY.
- 1.2 NOTE THAT YOU WILL NOT BE ALLOWED TO OPEN THE ENVELOPE CONTAINING THE QUESTION PAPERS BEFORE THE TIME OF COMMENCEMENT OF THE EXAMINATION.
- 1.3 24 HOURS ADVANCE INSTRUCTIONS FOR THIS PAPER WILL BE PROVIDED.
- 2.0 In addition to the normal fittings and reagents in a normal CSE Chemistry laboratory, each candidate will require the following:

**2.1 Apparatuses:**

- 1 pipette (20 cm<sup>3</sup> or 25 cm<sup>3</sup>)
- 1 burette (50 cm<sup>3</sup>)
- 3 titration flasks
- 2 beakers (250 or 300 cm<sup>3</sup>)
- 1 spatula
- 2 test tubes (pyrex)
- 2 Petri dishes/watch glasses
- Measuring cylinder (100 cm<sup>3</sup>)
- 1 Qualitative Analysis Guide
- 100 cm<sup>3</sup> beaker
- 1 stopwatch
- 1 heat source/burner
- 1 test tube holder
- 10 cm<sup>3</sup> measuring cylinder.

**2.2 Chemicals:**

- 3 g potassium hydroxide (KOH)
- 3 g ammonium chloride
- 0.1 g potassium ferrocyanide
- 1 g hydrochloric acid (HCl)
- 3 g ammonium hydroxide (NH<sub>4</sub>OH)
- 10 cm<sup>3</sup> methyl orange (MO) indicator
- 10 cm<sup>3</sup> phenolphthalein (POP) indicator
- 3 g calcium carbonate (CaCO<sub>3</sub>)
- 3 g lead (II) nitrate (Pb(NO<sub>3</sub>)<sub>2</sub>)
- 3 g sodium thiosulphate (Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>)
- 500 cm<sup>3</sup> of distilled water.