

INTERIM JOINT MATRICULATION BOARD



AHMADU BELLO UNIVERSITY
ZARIA

INTERIM JOINT MATRICULATION BOARD EXAMINATION 2023

INSTRUCTIONS TO SCHOOLS, COLLEGES AND POLYTECHNICS

CHEMISTRY PAPER III (ALTERNATIVE B)

- 1 a) Prepare **solution D** by transferring an accurately weighed 6.32 g of potassium tetraoxomanganate(VII), $KMnO_4$ to 2 dm^3 volumetric flask containing about 1 dm^3 distilled water. Shake the resulting solution and make it up to mark with distilled water. Store the solution in ambered-coloured (dark brown) bottle. Give each student about 90 cm^3 of the solution.
- b) Prepare **solution E** by weighing an accurately quantity of 3.78 g of hydrated oxalic acid (ethanedioic acid dihydrate), $H_2C_2O_4 \cdot 2H_2O$ to 2 dm^3 volumetric flask containing about 1 dm^3 distilled water. Shake the solution to dissolve the compound and make it up to mark with distilled water. Give each student about 100 cm^3 of the solution.
- c) Prepare **solution F** by transferring 220 cm^3 of concentrated tetraoxosulphate(VI) acid, H_2SO_4 (98 % w/w, specific gravity 1.80) in to 2 dm^3 volumetric flask containing about 1 dm^3 distilled water. Allow the solution to cool and gradually make it up to mark with distilled water. Give each student about 70 cm^3 of the solution.
- d) A measuring cylinder in addition to other materials for volumetric analysis.

2. Each student should be provided with the following samples (about 1 g each) appropriately labelled as indicated

SAMPLE B1 = COPPER(II) CHLORIDE

SAMPLE B2 = HEXANOL

SAMPLE B3 = p-CHLOROBENZALDEHYDE

Ensure that all necessary test reagents for inorganic and organic qualitative analyses are provided in the laboratory benches.

**THESE SHOULD BE THE CONTENT OF EACH SAMPLE AND THIS INFORMATION
SHOULD NOT BE DISCLOSED TO CANDIDATES.**