



ELIZADE UNIVERSITY, ILARA – MOKIN, ONDO STATE, NIGERIA

DEPARTMENT: PHYSICAL AND CHEMICAL SCIENCES

FIRST SEMESTER EXAMINATIONS: 2018/2019 ACADEMIC SESSION

COURSE CODE: CHM 207 COURSE TITLE: EXPERIMENTAL CHEMISTRY I

HOD's SIGNATURE

DURATION: 3 HOURS

INSTRUCTIONS: ATTEMPT ALL QUESTIONS

### QUESTION ONE

- A. Explain why hot oxalic acid is employed as titrant with permanganate ions. Write balanced chemical equations for the reactions.
- B. What is the function of ethanol in the preparation of chrome alum?
- C. What are the functions of glucose solution and aqueous sodium hydroxide in the preparation of copper (I) oxide?
- D. What effect will drying out the silica gel have on the partitioning of your components in column chromatography?
- E. Write a chemical test that differentiate a sugar from an aldehyde
- F. What instrument will you employ to remove a hot crucible from the furnace?
- G. Write confirmatory tests for sulphate and chloride ions.

### QUESTION TWO

- A. W is an aqueous solution of  $Zn^{+2}$ ,  $Al^{+3}$  and  $Cu^{+2}$ . Perform suitable chemical tests to identify the cations present.
- B. X, Y and Z are aqueous /ethanolic solutions of a phenol, a carboxylic acid and sugar **BUT NOT NECESSARILY IN THAT ORDER**. Perform suitable chemical tests to **IDENTIFY AND CORRECTLY LABEL THE SAMPLES**