



CATHOLIC UNIVERSITY OF EASTERN AFRICA

A. M. E. C. E. A

P.O. Box 62157

00200 Nairobi - KENYA

SPECIAL/SUPPLEMENTARY EXAMINATION Telephone: 891601-6

JANUARY – APRIL 2020 TRIMESTER

FACULTY OF SCIENCE

DEPARTMENT OF NATURAL SCIENCE (CHEMISTRY)

REGULAR PROGRAMME

CHEM 200: DESCRIPTIVE INORGANIC CHEMISTRY OF S AND P BLOCK ELEMENTS

Date: APRIL 2020

Duration: 2 Hours

INSTRUCTIONS: Answer Question ONE and ANY OTHER TWO Questions

- Q1. a) Define the following terms and explain the affecting their periodic variance **(10 marks)**
- i) Ionization energy
 - ii) Electron affinity
 - iii) electronegativity
- b) Explain the following observations **(10 marks)**
- i) HF has higher melting point than HCL
 - ii) Lithium carbonate is unstable compared to other alkali metals carbonates
 - iii) Salts of group II elements are more hydrated than those of group I elements
 - iv) Electron affinity of chlorine is higher of fluorine
 - v) Helium is in group is in group zero yet is not a P-block element
- ci) Use three examples to compare and contrast the chemistry of Beryllium and other alkali-earth metals **(6 marks)**
- ii). Explain four economic importance of group 1 elements **(4 marks)**

Q2. a) Discuss the occurrence, extraction and properties of sodium (10 marks)

b) Describe the manufacture of sodium hydroxide (10 marks)

Q3. a) Discuss the peculiarities of fluorine among halogens (8 marks)

b) Taking carbon group elements discuss the chemistry under the following sections

(12

marks)

- i) Elements physical properties
- ii) Oxides
- iii) Chlorides
- iv) Sulphides

Q4. a) Discuss the occurrence, extraction, properties and uses of magnesium (10 marks)

marks)

b) Compare and contrast the chemistry of group 1 and group 7 elements (10

marks)

Q5. The properties of the first member of a periodic group are anomalous. Illustrate this by examples in the chemistry of

a) Lithium (10 marks)

b)

c) Boron (10 marks)

END