THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

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MAIN EXAMINATION

JANUARY – APRIL 2020 TRIMESTER

FACULTY OF SCIENCE

DEPARTMENT OF COMMUNITY HEALTH AND DEVELOPMENT

REGULAR PROGRAMME

CCHD 113: GENERAL CHEMISTRY

Date: APRIL 2020	**Duration: 3 Hours**
INSTRUCTIONS: Answer ALL Questions	

SECTION A: SHORT ANSWER 10 QUESTIONS: 30 MARKS

Q1. Define the terms (**6 marks)**

i. Atom
ii. Matter
iii. Element
iv. Compound
v. Atomic number
vi. Isotope

Q2. State any three branches of chemistry. (**3 marks)**

Q3. State the Kinetic energy theory (**1 mark)**

Q4. State Boyle's law (**1 mark)**

Q5. State Charles law (**1 mark)**

Q6. Write the ideal gas law (**1 mark)**

Q7. Describe four phase changes of states of matter (**4 marks)**

Q8. Balance the equation below (**2 marks)**

$H + O \longrightarrow H_2O$

Q9. State any 4 factors that influence the rate of reactions. (**4 marks)**

Q10. Distinguish between strong acid and weak acid (**2 marks)**

Q11. Differentiate between oxidation and reduction (**2 marks)**

Q12. Calculate the number of moles In 1.45g of NaCl **(Na= 23, Cl=35.5)** **(3 marks)**

SECTION B (Answer any two Questions) 20 marks each

Q1. i. Draw the atomic structure of an Oxygen atom (**5 marks)**

ii. Discuss the characteristics of the particles in the three states of matter (**12 marks)**

iii. Calculate the pressure of oxygen at 58°C in an in a bag of 2000cm^3 in an ambulance emergency kit. (**3 marks)**

Q2. i. Describe 5 types of reactions (**10 marks)**

ii. Balance the following equation (**5 marks)**

$Fe + H_2SO_4 \longrightarrow Fe(SO4)_3 + H_2$

iii. Describe five factors that influence the rate of reaction of a chemical reaction (**5 marks)**

Q3. i. What is a bond? (**2 marks)**

ii. Describe any five types of chemical bonds. (**10 marks)**

iii. Carbon monoxide poisoning is a health threat during fire emergencies. Draw and describe the bonding between Carbon and oxygen in a carbon monoxide molecule (**3 marks)**

iv. List any five (5) properties of ionic compounds. (**5 marks)**

END