



# MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)

University Examinations for 2013/2014

DEPARTMENT OF COMPUTING AND APPLIED SCIENCE

End of Term Examination for EP & EE Craft Module I

Physical Science

**Date:** Thursday 27<sup>th</sup> March, 2014

**Time:** 2 Hours

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## INSTRUCTIONS:

- a) Write your Admission Number in the Answer Booklet
  - b) Answer all questions
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1. a) Using the pH Scale, describe a strong acid a weak acid, strong base and weak base (6 marks)  
b) Define a molecule (2 marks)  
c) State the differences between elements and compounds in terms of their composition (8 marks)
  2. Briefly explain the meaning of the following properties of metals (9 marks)
    - i. Malleability
    - ii. Ductility
    - iii. Conductivity
  3. a) List elements as they appear in the electrochemical series (6 marks)  
b) Write the molecular equation for the reaction between Hydrochloric Acid and Calcium metal (2 marks)  
c) Name the type of reaction in 3(b) above and state the reason for the name given to this type of reaction (4 marks)
  4. State what you understand by the term ionization (3 marks)
  5. a) Briefly explain the meaning of polarity in chemical molecules (4 marks)  
b) Using an appropriate diagram describe the polarization of water molecule (5 marks)

6. With relevant examples explain the meaning of monoprotic, diprotic and triprotic acids (6 marks)
7. a) Write the molecular, ionic and net equation for the reaction between sodium hydroxide and sulphuric acid (6 marks)
- b) What is the type of reaction occurring in 7(a) above (2 marks)
8. With the help of a diagram describe how you can prepare iron chloride (5 marks)
9. a) Differentiate between a normal and an acid salt (4 marks)
- b) Using sulphuric acid write two equations to show the formation of the two salts in 9(a) above (4 marks)
10. Using relevant examples, describe the type particles found in compounds, elements and mixtures (9 marks)
11. Briefly explain why sodium chloride does not dissolve in petrol (6 marks)
12. Outline the procedure that you would follow to separate a mixture of water, kerosene, sodium chloride and sand. (9 marks)