

**W1-2-60-1-6**

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

# **UNIVERSITY EXAMINATIONS 2015/2016**

**EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE**

**SCH 2353: GAS CHROMATOGRAPHY**

**DATE: AUGUST 2015 TIME: 2 HOURS**

**INSTRUCTIONS: ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS**

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**QUESTION ONE**

1. Name any two
2. Local companies that trade research bottled gas
3. problems that an be caused by impure gas
4. Fuel gases used in gas chromatography
5. Main precautions to be taken while handling the electron capture detector.
6. Medications of the flame ionisaton detector [10 marks]
7. Define
8. Ion exchange mechanism
9. Partition mechanism [6 marks]
10. Explain
11. Why metal or stainless steel tubing is used in GC
12. Why synthetic stationery materials are available in enumerable various types
13. Necessity of derivitization in gaz chromatography [10 marks]
14. Differentiate between
15. Retention factor and retention time
16. Stationary phase and mobile phase [4 marks]

**QUESTION TWO**

1. (i) Define derivatization [2 marks]

(ii) Describe any two methods of derivatization [6 marks]

1. Describe any two advantages of derivatization [2 marks]
2. With the help of a diagram, describe the working of an electron capture detector [10 marks]

**QUESTION THREE**

1. Briefly describe how a gas chromatograph can be used to analyze a volatile liquid. [10 marks]
2. Write short notes on
3. Gas purifiers
4. Temperature programming in Gas chromatography [10 marks]

**QUESTION FOUR**

1. Give any to
2. visualization methods in thin layer chromatography
3. main classification of detectors [4 marks]
4. (i) Describe the laboratory production of hydrogen for gas chromatography [5 marks]
5. Give at least two advantages of laboratory produced gas [2 marks]
6. Explain why gas flow rate is measured in mass units and not by volume units [6 marks]
7. Draw a diagram to illustrate the main components in the flame ionization detector [3 marks]