
CHUKA



UNIVERSITY

**UNIVERSITY EXAMINATIONS
RESIT/SPECIAL EXAMINATIONS**

**SECOND YEAR EXAMINATION FOR THE AWARD OF DEGREE BACHELOR OF
EDUCATION (SCIENCE) AND BACHELOR OF SCIENCE**

CHEM 231: ORGANIC CHEMISTRY II

STREAMS:

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 25/07/2018

2.30 P.M – 4.30 P.M

INSTRUCTIONS:

- **Do not write anything on the question paper**
- **Answer all questions**

1. (a) What is the difference between enantiomers and diastereomers? [2marks]
(b) Draw and name two enantiomers of 2-bromobutane. [4marks]
(c) Name the following compounds. [4marks]

- (d) Draw structures of the following compounds. [4marks]
- (i) Thiophenol
- (ii) 2-propene-1-thiol
- (iii) P-chlorotoluene
- (iv) 4-ethyl-2,2 -dichlorohexane
- (e) State and explain two factors that increase stability of carbonations. [4marks]
- (f) Give four factors that affect the rate of SN1 and SN2 reactions. [4marks]
- (g) How does a substituent affect electrophillic aromatic substitution. [4marks]
- (h) Explain reaction of ethers. [4marks]
2. (a) Use Newman projections and draw various conformers of butane and explain their stabilities. [10marks]
- (b) Describe two methods of preparations alkyl halides. [10marks]
3. (a) Using reaction between CH_3Br and CH_3COO^- , explain S_N2 reaction in terms of kinetics, mechanisms and reactivity. [10marks]
- (b) Describe synthesis of alcohols via Grignard reagents showing relevant general mechanism. [10marks]
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