

KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2011/2012

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR SCIENCE

(FOOD, NUTRITION AND DIATETICS)

HFN 107: ORGANIC CHEMISTRY

DATE: MONDAY, 2ND APRIL 2012

TIME: 2.00 P.M. – 4.00 P.M.

SECTION A: Answer ALL questions.

1. Identify the functional groups in the following compounds

- a) $\text{CH}_3\text{CH}_2\text{CHCH}_2$
- b) CH_3CONH_2
- c) $\text{CH}_3\text{COOCH}_3$
- d) $\text{CH}_3\text{CH}(\text{Cl})\text{CH}_3$
- e) $\text{CH}_3\text{COCH}_2\text{CH}_3$
- f) $\text{CH}_3\text{CH}(\text{OH})\text{CH}_3$

(6 marks)

2. Give the IUPAC names for the following compounds:

- a) $\text{CH}_3\text{COCH}_2\text{CH}_3$
- b) $\text{CH}_2(\text{OH})\text{CH}(\text{OH})\text{CH}_2\text{OH}$
- c) $\text{CH}_3\text{NHCH}_2\text{CH}_3$
- d) $\text{CH}_3\text{CHCHCH}(\text{Cl})\text{CH}_3$
- e) $\text{CH}_3\text{COOCH}_2\text{CH}_3$
- f) $\text{CH}_3\text{CH}(\text{Cl})\text{CH}(\text{OH})\text{CH}_3$

(6 marks)

3. Give the reagents and reaction conditions for the following chemical conversions.

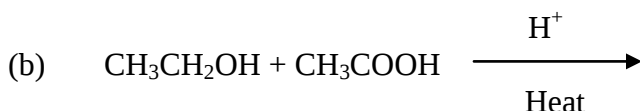
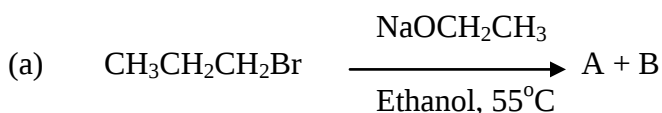


(6 marks)

4. Explain the process of rancidity.

(6 marks)

5. Identify the products of the following reactions:



(6 marks)

SECTION B: Answer Two Questions Only

6. a) Distinguish between SN_1 and SN_2 reactions

(6 marks)

b) Using a suitable alkyl halide show the mechanism for SN_1 reaction.

(14 marks)

7. Show how to prepare the following compounds starting with benzene.

a) Nitrobenzene

b) Aniline

c) 1-amino-4-nitro benzene

d) 2-benzyl propane

8. Write explanatory notes on each of the following:

a) Friedel Crafts methylation reactions vs Friedel Crafts acylation

b) Maillard reaction

c) Trans esterified fats

d) Depletion of Ozone by Chlorofluorocarbon compounds.
