University of Palestine

Course No: DNTS135
Course Title: Organic Chemistry
Date: 27/05/2014
No. of Questions: (5)
Time: 2hours
Using Calculator (No)

Final Exam
2nd Semester 2013/2014
Total Grade:

Instructor Name: _____
Student No.: _____
Student Name: _____
College Name: _____
Dep. / Specialist: _____
Using Dictionary (No)

Question One: (30 marks)

Construct equations to describe the following organic reactions. **Draw** the structural formulae for **both** reactants and products and give IUPAC **names** of all products for each of the following reactions:

a) 1,4-cyclohexadiene and hydrogen in the presence of the catalyst *platinum*:

b) Cyclopentene and bromine in *aqueous* solution:

c) 2-pentene and cold *potassium mangenate*:

d) trans-2,3-dimethyl-2-butene and hot acidified $KMnO_4$:

e) Cyclobutene and iodine (I_2) in the inert solution carbon tetrachloride:

f) 2-methylbut-3-enoic acid and HCl in the presence of the catalyst $AlCl_3$:

g) **benzoic** acid and **phenol** under reflux and in the presence of sulfuric acid:

h) propyne and 2 moles of HBr:

i) hexan-2-ol and the oxidant potassium dichromate $K_2Cr_2O_7$:

j) ethanoic acid and the reductant lithium aluminum hydride $LiAlH_4$:

Question Two: (8 marks)

Starting with 1-butanol, describe all possible reactions involved to convert this primary alcohol into 2,3-dibromobutane. *State reaction conditions* for each step.

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Question Three: (4 marks)

An alkene was *oxidatively* cleaved by hot acidified *potassium mangenate*. Carbon dioxide and hexanoic acid were produced**. Name** the starting alkene.

Question Four: (4 marks)

Draw the structure and **name** the products formed as hept-4-enoic acid undergoes **cleavage** by acidified hot $KMnO_4$:

Question Five: (4 marks)

Starting with **propene** how can you prepare?

a) 1-bromopropane b) 2-bromopropane