



تاريخ الإمتحان : 2020 - 1 - 20

الفصل الدراسي : الأول 2019 / 2020

الإمتحان : كيمياء عضوية (حلقية متجانسة) (305 ك)

الزمن : 3 ساعات

الدرجة الكلية : 90 درجة

الفرقة الثالثة : شعبة كيمياء خاص

Answer all questions : (90 Marks)

Time Allowed: 3hrs.

Part 1 : Alicyclic : (45 Marks ; 1.5 h.) (Fathy Muhammad El-Taweel)

Question 1 : Complete in equations the following : (3 x 5 = 15 Marks)

- 1,2-Dimethylcyclobutene + O_3 / H_2O then NaOH.....
- Intramolecular cyclization of $BrMg (CH_2)_5COCH_3$ then H_2O
- Cyclohexanol + $KMnO_4$ then HNO_3 then $Zn (Hg)/HCl$
- 1, 2-Dibromoethane + ethyl acetoacetate + $NaOC_2H_5$... then $H_3O^+ / heat$
- 1; 2-Dimethylcyclohexene + O_3 / H_2O then NaOH.....

Question 2 : Prepare : (15 Marks)

Cyclohexan-1,3-dione, Dimedone, cyclopentane-1,3-dicarboxylic acid and cyclohexane-1,2-carboxylic acid from diethyl malonate.

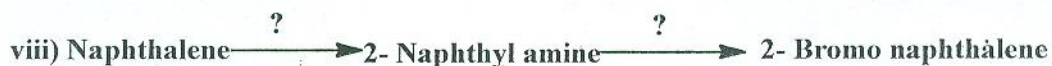
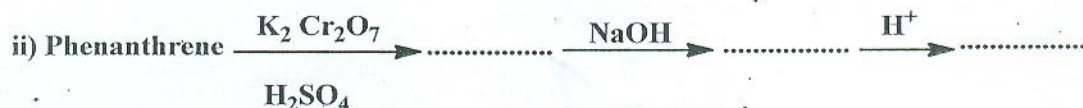
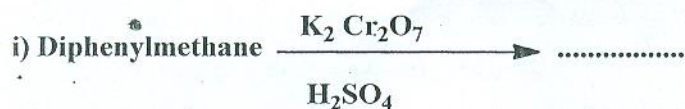
Question 3: Write in equations : (3 x 5 = 15 Marks)

- Heating of barium adipate and then reaction with HNO_3 .
- Cyclization of diethyl pimelate with $NaOC_2H_5$ and then $H_3O^+ / heat$, followed by reduction with $Zn(Hg)/HCl$.
- Reaction of diethyl oxalate with diethyl glutarate and $NaOC_2H_5$ then $H_3O^+ / heat$.
- Reaction of diethyl succinate with $NaOC_2H_5$ then $H_3O^+ / heat$.
- Ozonolysis of 1,2-dimethylcyclopentene and then cyclization with NaOH.

بقية الأسئلة بالصفحة التالية

[Part 2 Polynuclear Hydrocarbons (45 Marks)]..... /...أ.د. سامي بيومي.../

1- Write the complete equations of the following: (8 x 3 = 24 Marks)



2- Write on the following (Use reactions Equation): (7 x 3 = 21 Marks)

i) Posher synthesis.

ii) Electrophilic substitutions of anthracene.

iii) Nitration of biphenyl and diphenyl methane.

iv) Howrth synthesis of 1-alkyl naphthalene and 2-alkyl naphthalene.

v) Dehydration of diphenic acid.

vi) Oxidation of naphthalene.

vii) Elbs reaction.

..... بالتوفيق باذن الله