

B.Sc.(Honours)Examination, 2018

Semester-V

Chemistry (Honours)

Course: BCHC-52

(Organic Chemistry)

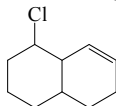
Time: Three Hours

Full Marks: 30

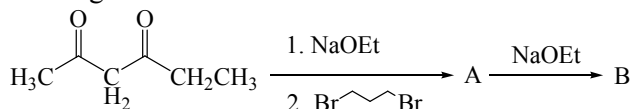
Questions are of value as indicated in the margin.

Answer *any three* questions.

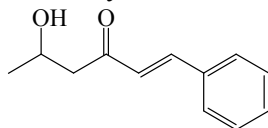
- Steric compression may accelerate reaction rate in certain occasions - do you agree with this statement? Justify your answer with the help of a suitable example. 3
 - Do you regard the act of Mutarotation as a phenomenon of dynamic stereoisomerism? Justify your answer. 2.5
 - Mention one example of modified version of woodward reaction with its proposed mechanism. 3
 - Offer an example of enzyme-catalyzed chemoselective reaction. 1.5
- Draw chemical structures for both the sweet- and bitter- tasted aspartame molecules. Outline the synthesis of aza-aspartame. In its solid state aza-aspartame is bitter in taste while in solution it is almost tasteless. Other chemical explanation behind these phenomena. 1+3+1
 - "Steric assistance works in S_N' reaction" – Do you agree with this statement? Justify your answer. 2
 - Comment on the conformational preference of 1,2-dihaloethanes. 3
- Give the IUPAC nomenclature of the following compound: 1



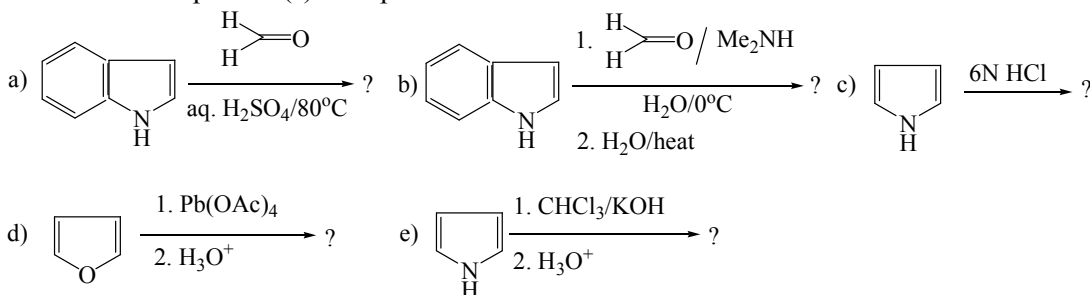
- Complete the following reaction: 1+1



- Write down the possible conformations of *cis*-*t*-butyl-3-methyl cyclohexane and *t*-butyl-3-methyl cyclohexane and explain which one is most explain and why? 1+1+1
- What are the possible reaction if we treat the following molecule separately with acid (H^+) and base (HO^-). Explain mechanistically. 1+3

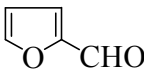
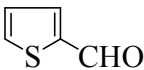



- Write down the product(s) with plausible mechanism: 5x2



P.T.O.

(2)

5. a)  and  gives usual properties of aldehyde such as benzoin condensation but  does not undergo the usual reaction of aldehyde – why? 2
- b) The reactivity of pyrrole is just similar of PhOH or PhNH₂ : why? 2
- c) What is Furaneol? How could you synthesis Furaneol from dimethyl furan? 2
- d) Phridine is more basic than pyrrole whereas it is less basic than aliphatic tertiary amine – why? 2
- e) Which position(s) are succetible for electrophilic and neucleophilic attack in pyridine? – Explain. 2
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