



Applied Organic Chemistry 513 CHM

الإجابة النموذجية لامتحان مادة الكيمياء العضوية التطبيقية 513 ك

ورقه امتحانيه كامله (ساعتان)

الفرقة : دبلومه كيمياء تحليليه

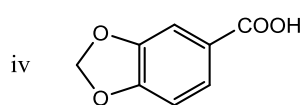
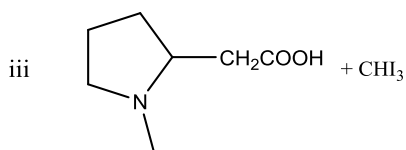
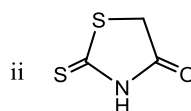
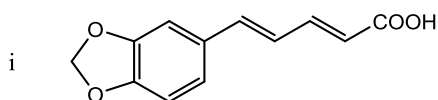
التاريخ : الاثنين 20 / 1 / 20

الممتحن : ا.د/ محمد سيد عبد الرحمن سيد بحالو

قسم : الكيمياء

كلية : العلوم

1-



2- Antiviral, anticancer, aldose reductase inhibitor, antibacterial, antifungal, antidiabetic and pesticidal,

3-

i- Elemental analysis and MW det. \longrightarrow MF is $C_{10}H_{15}NO$

ii- Reaction with $HNO_2 \longrightarrow$ -Ve, tertiary amine

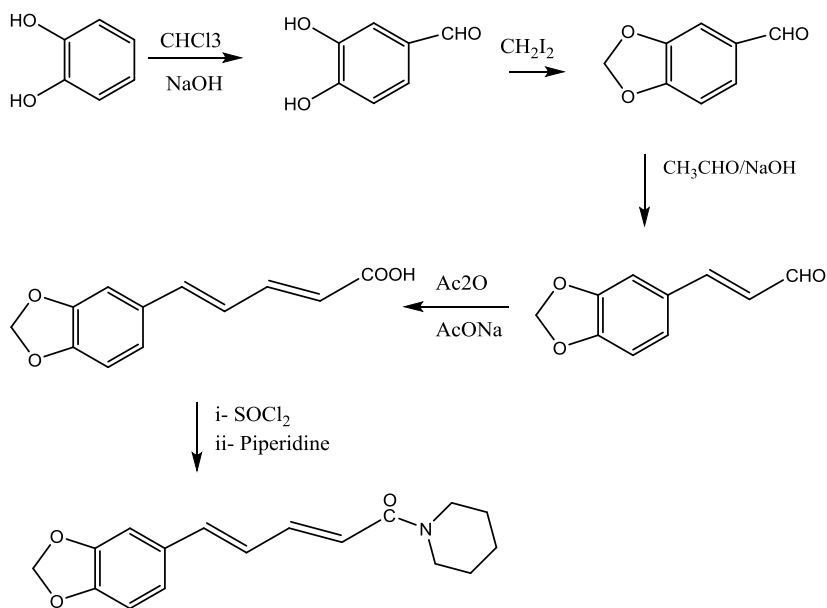
iii- Reaction with benzene sulphonyl chloride \longrightarrow -Ve, tertiary amine

iv- It reacts with one mole acetic anhydride \longrightarrow it has one hydroxyl group

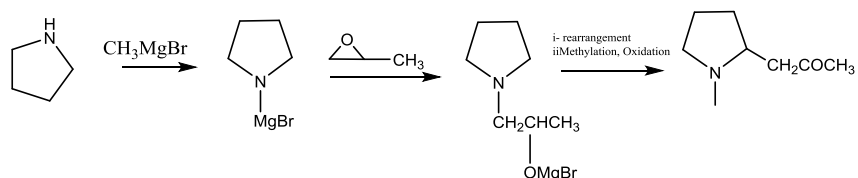
v- It reacts with FeCl_3 and give dark color \longrightarrow phenolic OH

vi- Oxidation give p-anisic acid \longrightarrow mono side chain

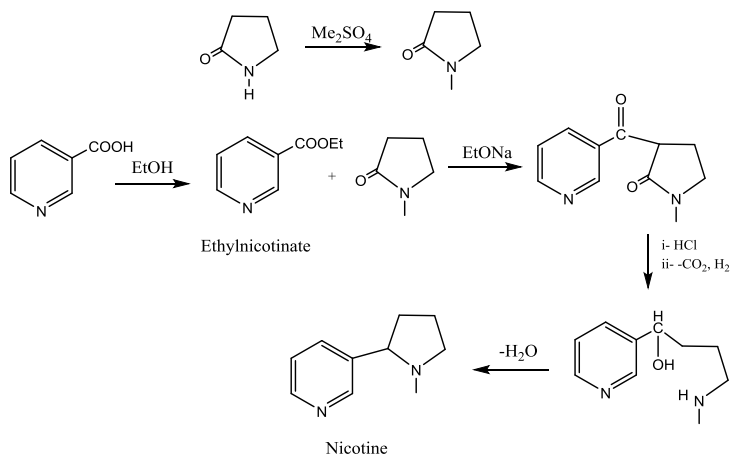
4- i-



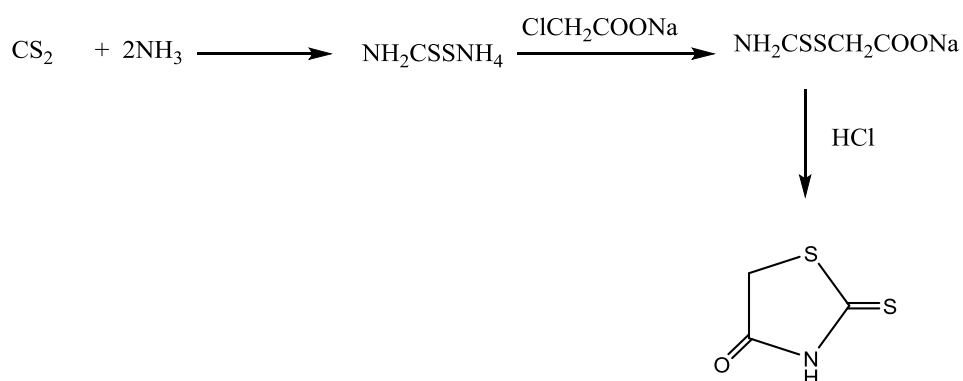
ii-



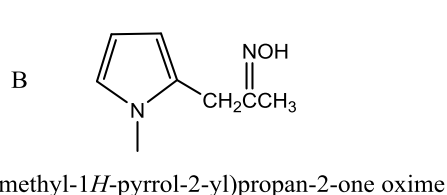
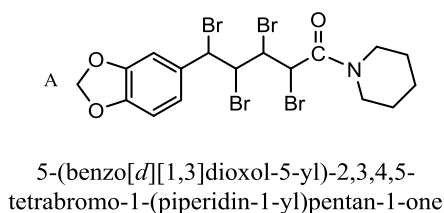
iii-



iv-



5-



6-

i- 3-(1-methylpyrrolidin-2-yl)pyridine

ii-

1- Elemental analysis and MW det. \longrightarrow MF is $\text{C}_{10}\text{H}_{14}\text{N}_2$

2- Reaction with $\text{HNO}_2 \longrightarrow$ -Ve, tertiary amine

3- Reaction with benzene sulphonyl chloride \longrightarrow -Ve, tertiary amine

4- Heating with $\text{ZnCl}_2 \longrightarrow$ mixture of pyridine, pyrrole and methyl amine
(methyl group at N)

5- Oxidation of nicotine gives nicotinic acid \longrightarrow side chain of pyridine at position 3

6- Reduction by hydrogen consume only $3\text{H}_2 \longrightarrow$ saturation at pyrrole