



Applied Organic Chemistry

الإجابة النموذجية لامتحان مادة الكيمياء العضوية التطبيقية ٥١٣ ك

الفرقة : دبلوم كيمياء تحليلية

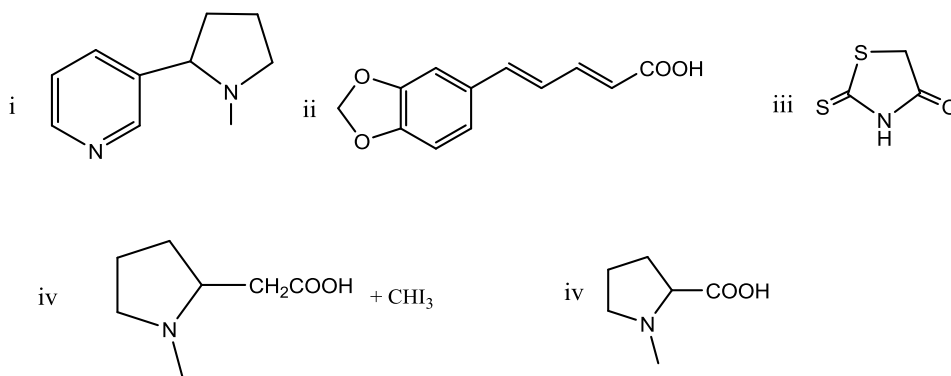
التاريخ : الاثنين ٢ / ١ / ٢٠١٧

الممتحن : د/ محمد سيد عبد الرحمن سيد بحالو

قسم : الكيمياء

كلية : العلوم

1- A-



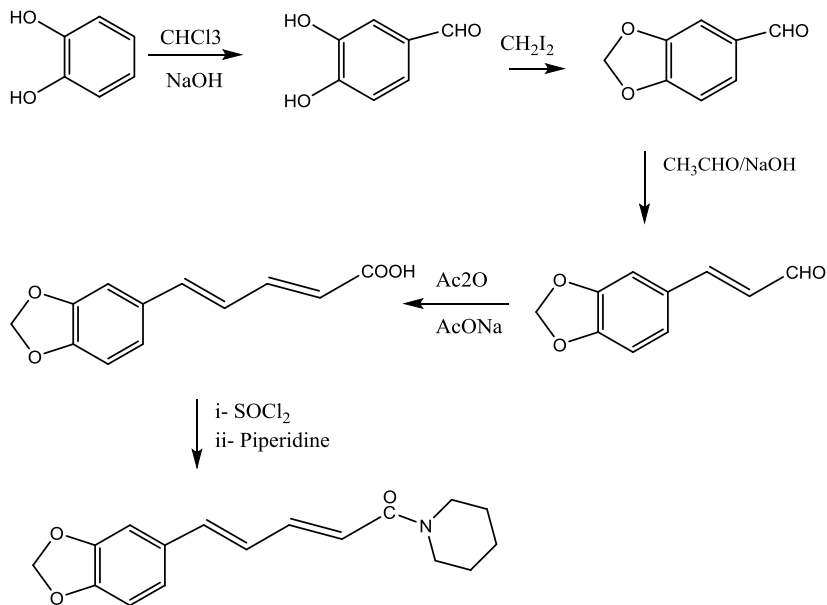
B- Antiviral, anticancer, aldose reductase inhibitor, antibacterial

C-

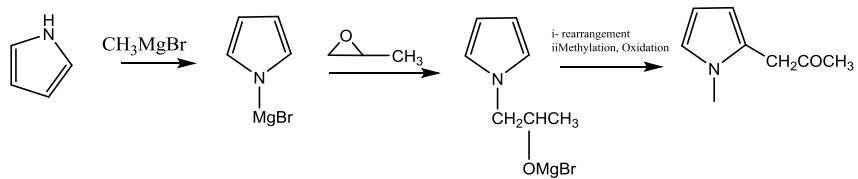
- 1- Elemental analysis and MW det.  $\longrightarrow$  MF is  $C_{10}H_{15}NO$
- 2- Reaction with  $HNO_2$   $\longrightarrow$  -Ve, tertiary amine
- 3- Reaction with benzene sulphonyl chloride  $\longrightarrow$  -Ve, tertiary amine
- 4- It reacts with one mole acetic anhydride  $\longrightarrow$  it has one hydroxyl group
- 5- It reacts with  $FeCl_3$  and give dark color  $\longrightarrow$  phenolic OH

6- Oxidation give p-anisic acid  $\longrightarrow$  mono side chain

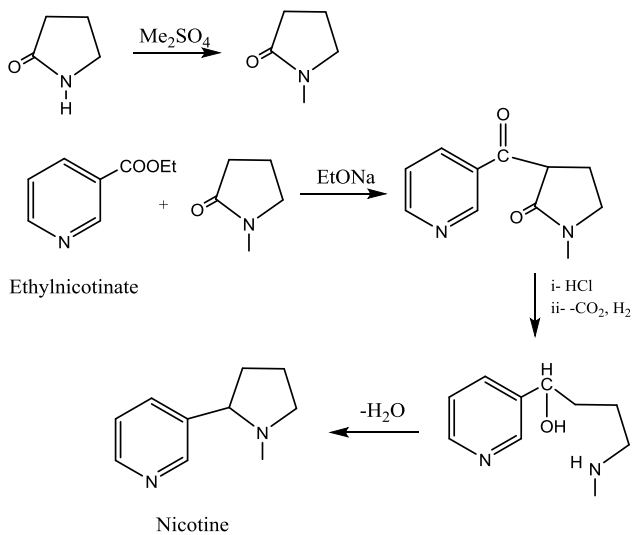
2- A- i



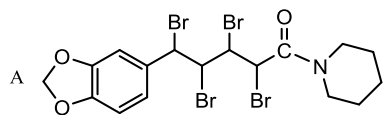
ii-



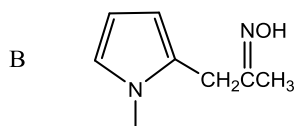
iii-



B-



5-(benzo[*d*][1,3]dioxol-5-yl)-2,3,4,5-tetrabromo-1-(piperidin-1-yl)pentan-1-one



1-(1-methyl-1*H*-pyrrol-2-yl)propan-2-one oxime

C-

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

ii-

- 1- Elemental analysis and MW det.  $\longrightarrow$  MF is  $C_{10}H_{14}N_2$
- 2- Reaction with  $HNO_2 \longrightarrow$  -Ve, tertiary amine
- 3- Reaction with benzene sulphonyl chloride  $\longrightarrow$  -Ve, tertiary amine
- 4- Heating with  $ZnCl_2 \longrightarrow$  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  $3H_2 \longrightarrow$  saturation at pyrrole