

浙江理工大学

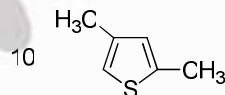
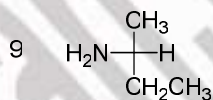
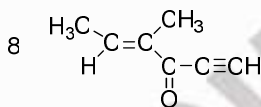
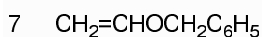
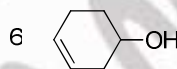
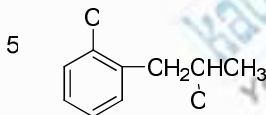
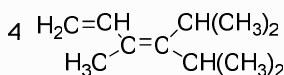
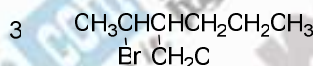
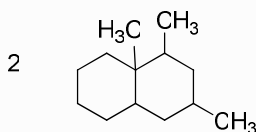
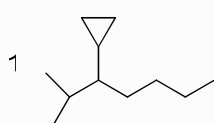
二〇一二年硕士学位研究生招生入学考试试题

考试科目：有机化学 A

代码： 926

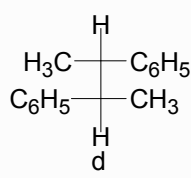
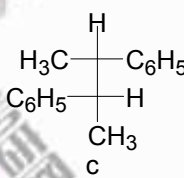
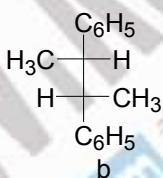
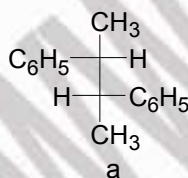
(请考生在答题纸上答题，在此试题纸上答题无效)

一、给下面的化合物命名 (20 分)



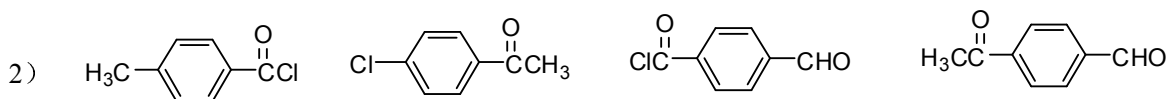
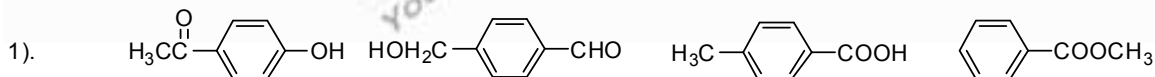
二、简答题 (30 分)

1、判断各组构型间的关系

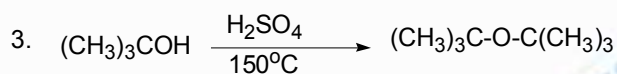
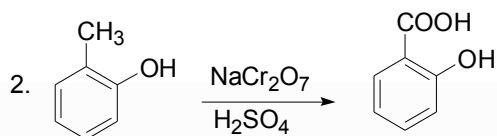
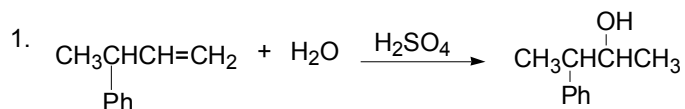


a 与 b 是() b 与 c 是()
a 与 c 是() a 与 d 是()

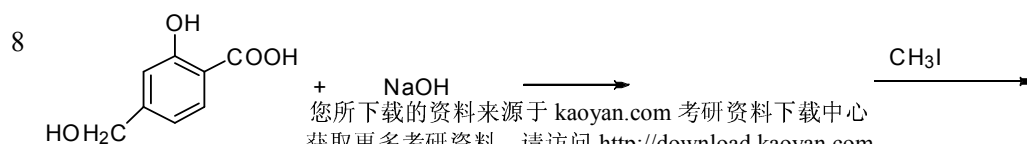
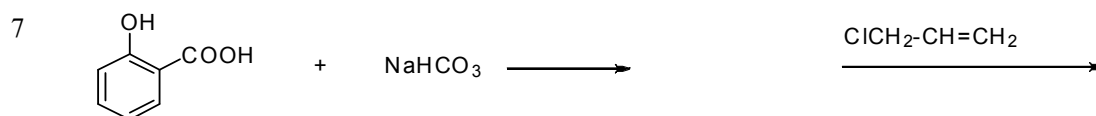
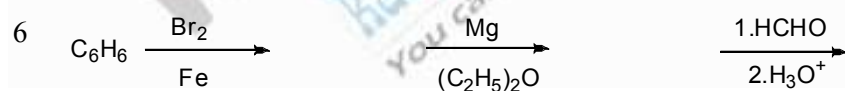
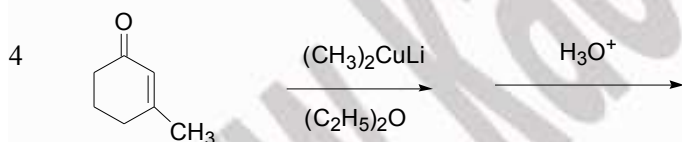
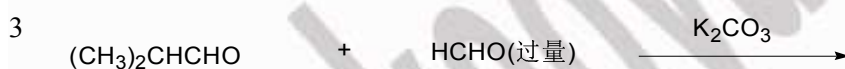
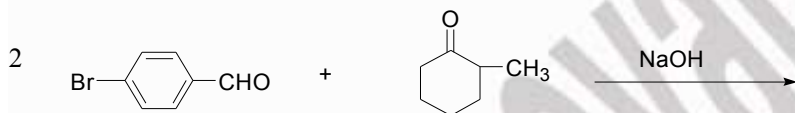
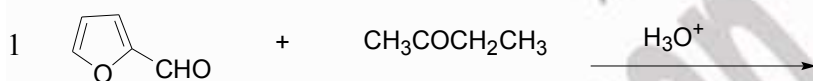
2、请用化学方法鉴别下面的化合物

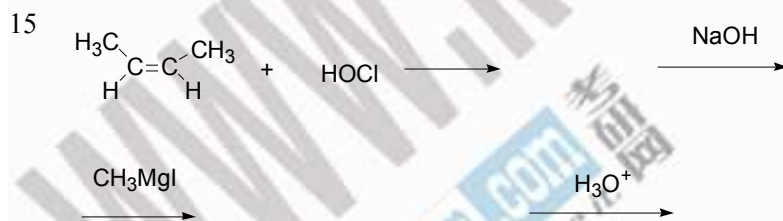
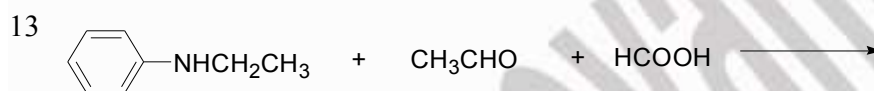
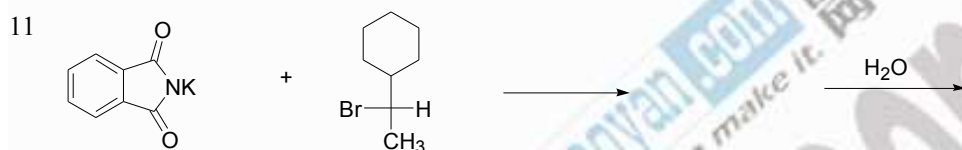
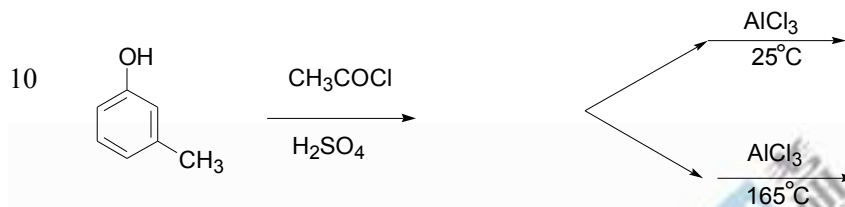
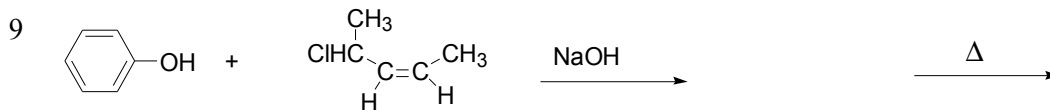


3、请指出下面的反应式中存在的问题，并写出正确的反应产物。

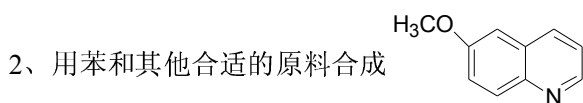
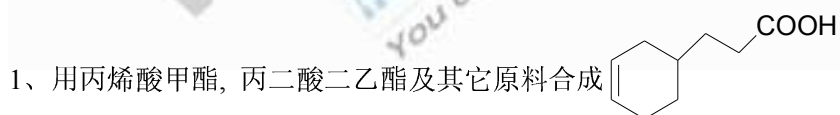


三、完成下面的反应 (45 分)

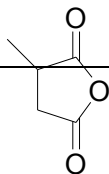




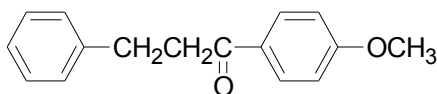
四、完成下面的合成 (40 分)



3、以丙酮及不超过 2 个碳的有机物合成



4、用苯和不超过 2 个碳的原料合成



5、用丙二酸二乙酯及不超过 2 个碳的有机原料合成 (±) 丙氨酸

五、推论题 (15 分)

化合物 A、B、C 的分子式都为 $C_8H_{11}N$ 。A 的核磁共振信号为：1.14ppm 处有三重峰 (3H)，2.49ppm 处有四重峰 (2H)，3.20ppm 处有单峰 (2H)，6.40~6.84ppm 处有多重峰 (4H)；A 的红外光谱在 $3400cm^{-1}$ 处有强吸收峰；A 先用 $NaNO_2/H_2SO_4$ 在 $0\sim 5^\circ C$ 处理，然后加热水解时有气体产生，产物是 D ($C_8H_{10}O$)。B 的核磁共振信号为：1.12ppm 处有三重峰 (3H)，3.03ppm 处有四重峰 (2H)，3.23ppm 处有单峰 (1H)，6.32~7.63ppm 处有多重峰 (5H)；B 用 $NaNO_2/HCl$ 处理得一既不溶于酸又不溶于碱的黄色油状物 E ($C_8H_{10}N_2O$)。C 的核磁共振谱信号为：2.85ppm 处有单峰 (6H)，6.42~7.10ppm 处有多重峰 (5H)，用 HNO_2 处理得一种绿色结晶 F ($C_8H_{10}N_2O$)。请写出 A，B，C，D，E，F 的结构式及 A-D，B-E，C-F 的反应方程式。