

杭 州 师 范 大 学

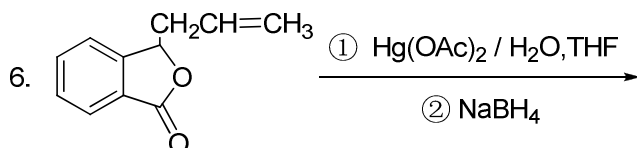
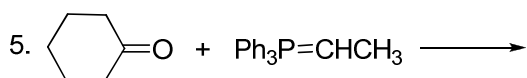
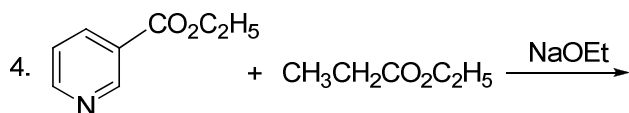
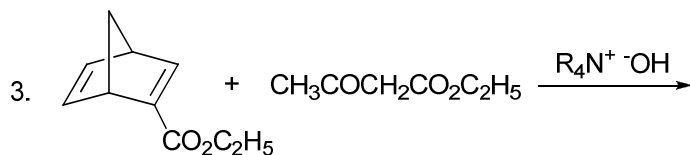
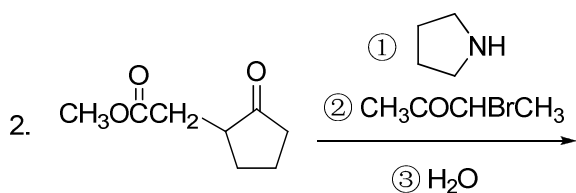
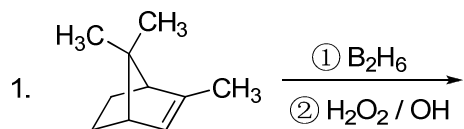
2012 年招收攻读硕士研究生入学考试题

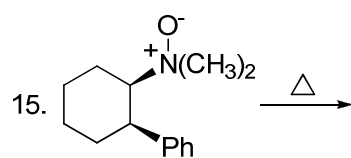
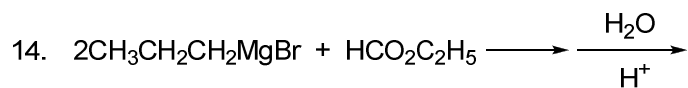
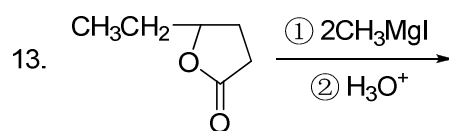
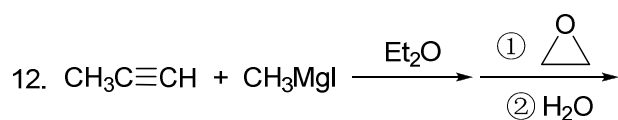
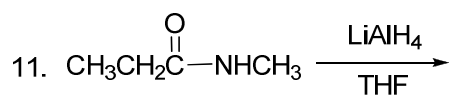
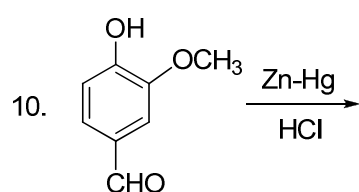
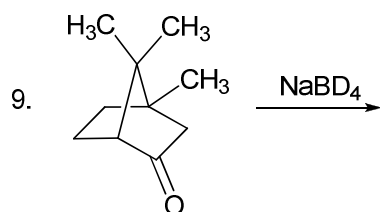
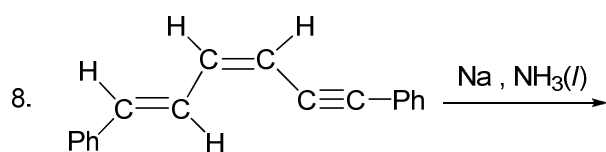
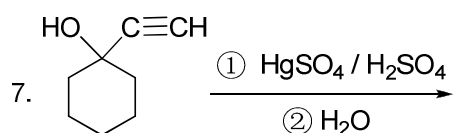
考试科目代码: 825

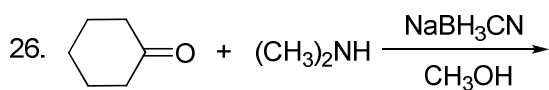
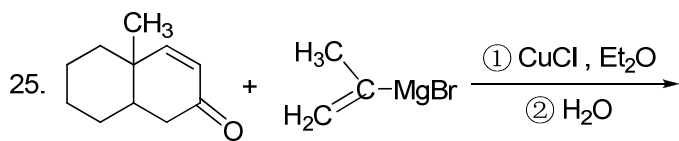
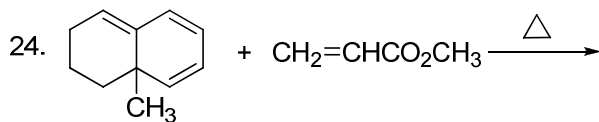
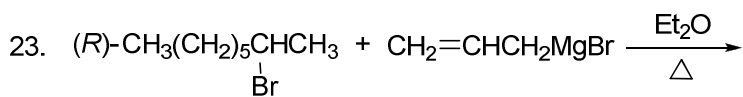
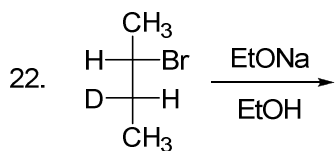
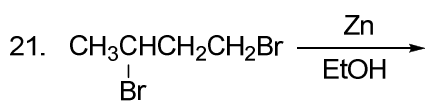
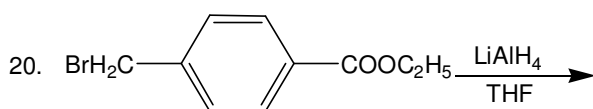
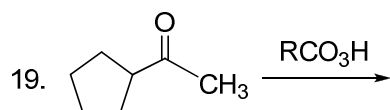
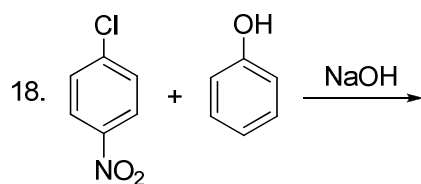
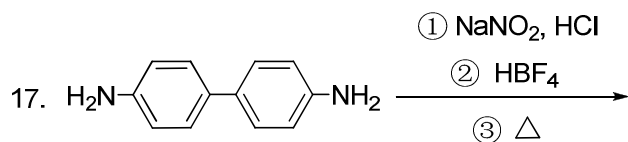
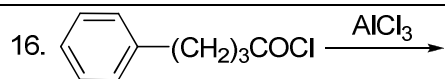
考试科目名称: 有机化学(二)

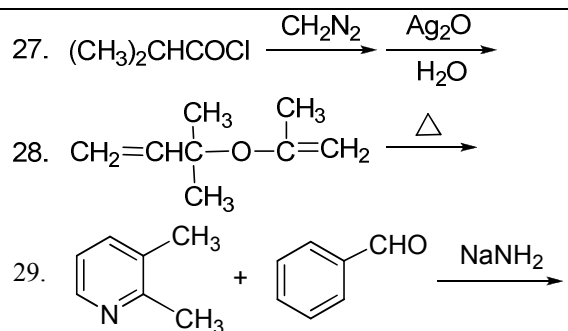
- 说明: 1、命题时请按有关说明填写清楚、完整;
2、命题时试题不得超过周围边框;
3、考生答题时一律写在答题纸上, 否则漏批责任自负;

一. 完成反应式(写出主要产物, 有立体化学问题, 请注明)(每小题 2 分, 共 58 分)

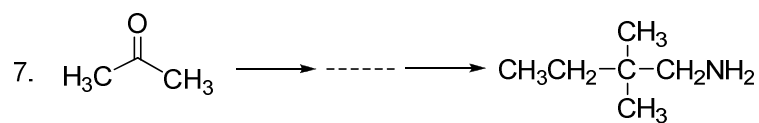
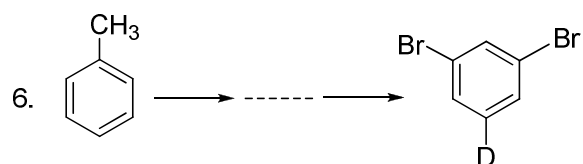
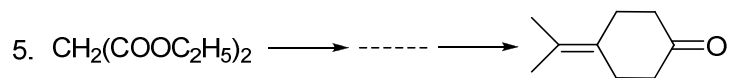
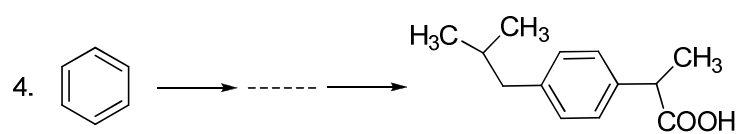
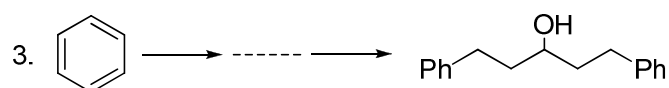
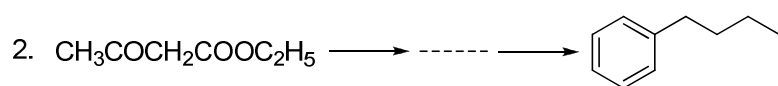
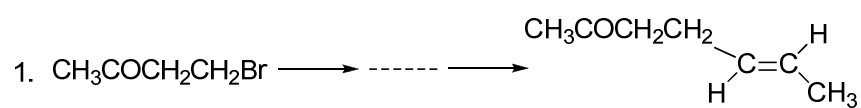




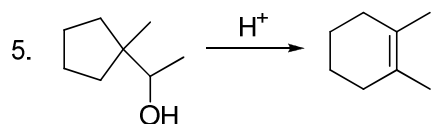
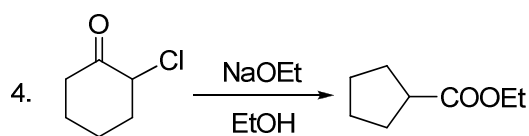
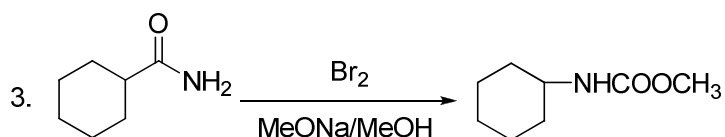
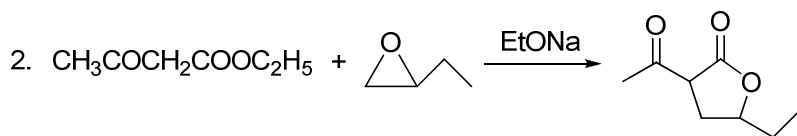
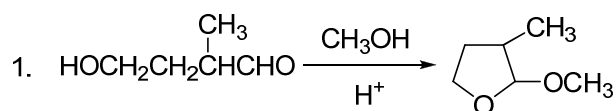




二. 从指定原料出发, 用不超过四个碳的有机物、苯及必要的无机试剂合成 (每小题 7 分, 共 56 分)



三. 试为下述反应提出合理的、可能的、分步的反应机理 (用弯箭头表示电子对的转移, 用鱼钩箭头表示单电子的转移, 并写出各步可能的中间体)。(每小题 5 分, 共 25 分)



四. 推测结构 (共 11 分)

- 中性化合物 A ($\text{C}_{10}\text{H}_{12}\text{O}$) 经臭氧分解产生甲醛, 但无乙醛, 加热至 200°C 以上时, A 迅速异构化成 B。B 经臭氧氧化分解产生乙醛, 但无甲醛; B 可与 FeCl_3 发生显色反应; B 能溶于 NaOH 溶液; B 在碱性条件下与碘甲烷作用得到 C。C 经氧化后得到邻甲氧基苯甲酸。试推测 A、B 和 C 的构造式。(5 分)

- 化合物 A ($\text{C}_8\text{H}_{11}\text{NO}$) 的红外光谱及核磁共振光谱数据如下:

IR/cm^{-1} : 3490, 3400, 3050, 2980, 1600, 1550, 1240(s), 1050(s), 820(s);

$^1\text{H NMR } \delta$ (ppm): 6.9(多重峰, 4H), 3.9(四重峰, 2H), 3.2(单峰, 2H), 1.3(三重峰, 3H)。

根据以上数据推测 A 的结构式并指出 $^1\text{H NMR}$ 各峰的归属。(6 分)