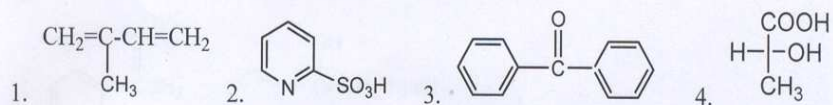


08 硕士有机答案

一、命名下列化合物或写出其结构式(每小题 1.5 分, 共 12 分)

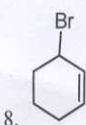
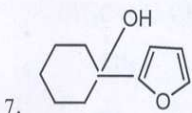
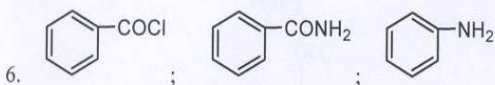
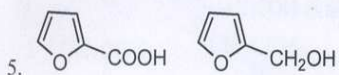
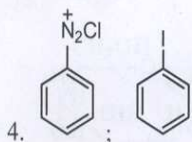
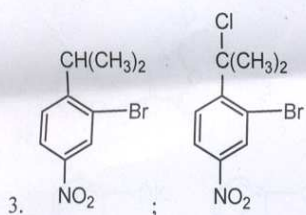
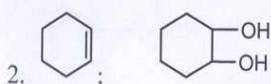


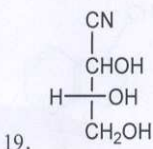
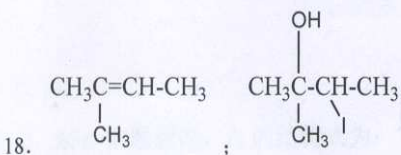
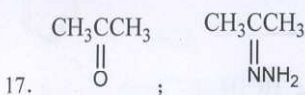
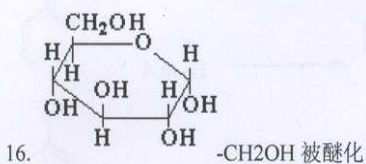
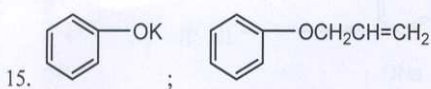
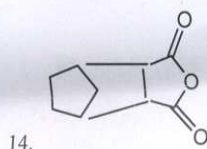
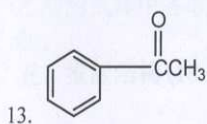
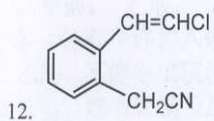
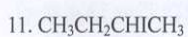
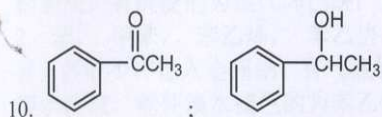
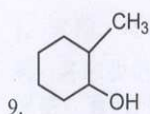
5. N,N-二甲基甲酰胺; 6. N-乙基间甲苯胺; 7. 吡啶。 8. 1,6-二甲基-1-环己烯

二、选择题(每小题 1.5 分, 共 30 分)

1. C 2. A 3. A 4. C 5. A 6. C 7. B 8. C 9. D 10. A
11. B 12. D 13. C 14. D 15. C 16. D 17. D 18. B 19. B 20. A

三、完成下列反应式(写出主要产物)(每空 1.5 分, 共 45 分)





四、用简便的化学方法区别下列各组化合物(每小题 4 分, 共 12 分)

1. 苯酚, 环己醇, 环己烷, 溴代环己烷

答: 各取少许加入溴水溶液, 能生成白色沉淀的为苯酚; 剩下的各取少许加入金属钠, 有气泡放出(氢气)的为环己醇; 剩下的各取少许加入硝酸银的乙醇溶液, 稍加热, 有沉淀的为溴代环己烷; 无明显现象者为环己烷。

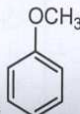
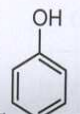
2. 苯, 甲苯, 苯乙烯, 苯乙炔

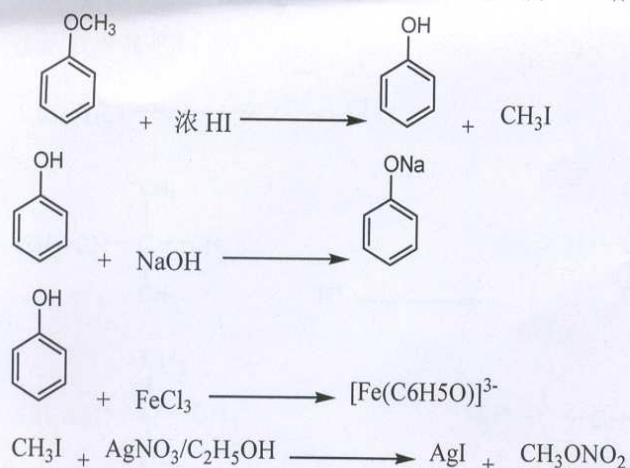
答: 各取少许加入金属钠, 有气泡放出(氢气)的为苯乙炔; 剩下的各取少许加入溴水溶液, 能使溴水褪色的为苯乙烯; 剩下的各取少许加入酸性高锰酸钾溶液, 能使高锰酸钾溶液褪色的为甲苯。

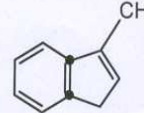
3. 甲酸, 乙酸, 乙醛, 乙醇

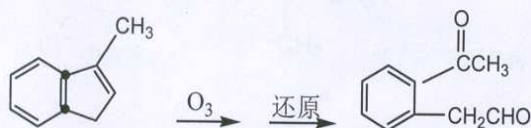
答: 各取少许加入碘的氢氧化钠溶液, 能生成黄色沉淀(碘仿)的两物质为乙醛和乙醇, 不能生成沉淀的为甲酸和乙酸; 将能生成黄色沉淀的两物质再与托伦试剂检验, 能有银镜反应的是乙醛, 没有明显现象者为乙醇; 在剩下的可能是甲酸和乙酸的试样中各取少许加入托伦试剂, 有银镜反应的是甲酸, 无明显现象者为乙酸。

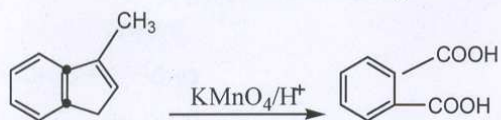
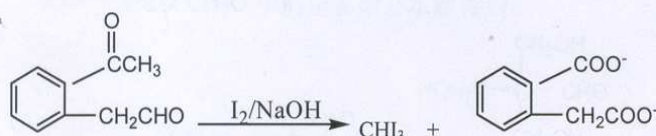
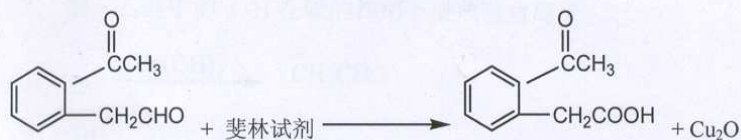
五、推测结构(18分)

1. 解: 依题意得, A 为  ; B 为  ; C 为 CH_3I 各步反应为:

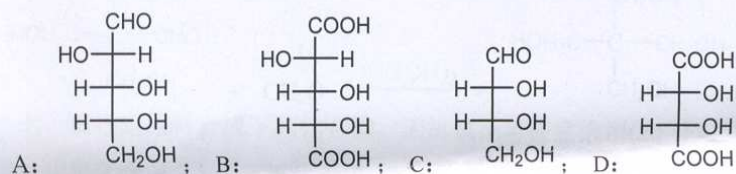


2. 解: 依题意得, A 的结构式为:  各步反应为:

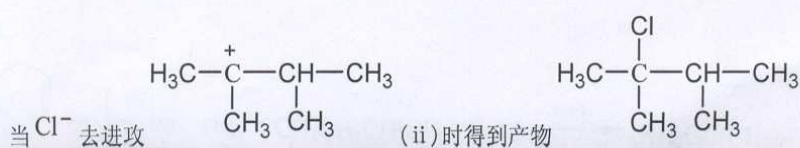
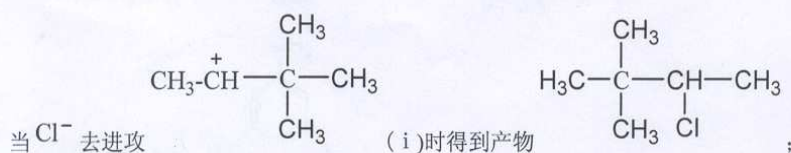
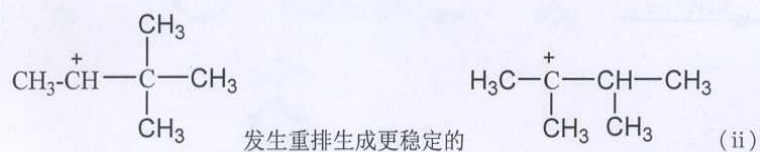
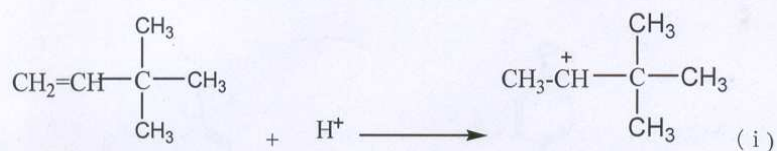




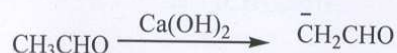
3. 解: 依题意得, A、B、C、D 的结构式(用投影式表示)为:



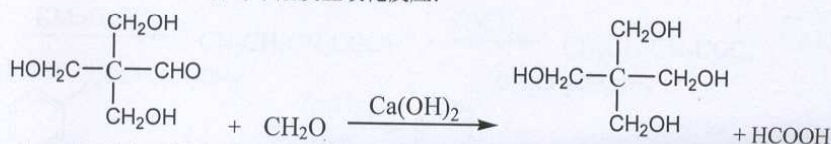
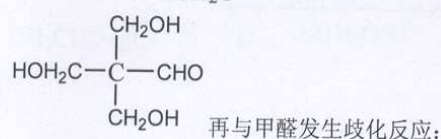
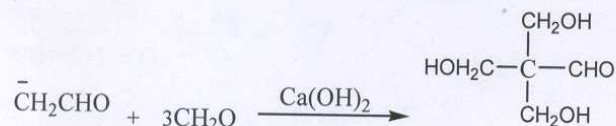
六、反应机理(16分)



2. 解：乙醛中的 α -H 在碱的作用下变成碳负离子

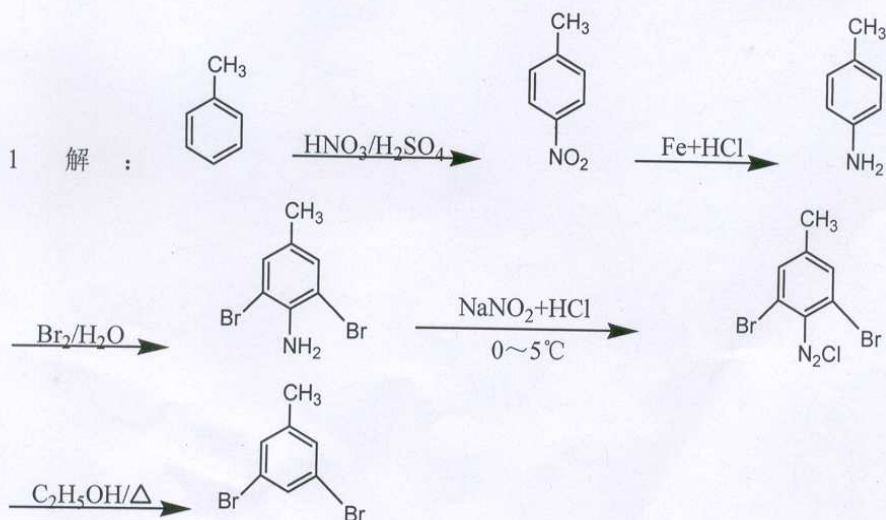


$\bar{\text{C}}\text{H}_2\text{CHO}$ 去进攻 CH_2O 中的羰基碳并水解得到：

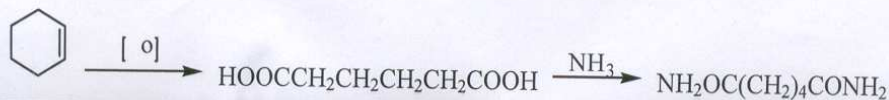


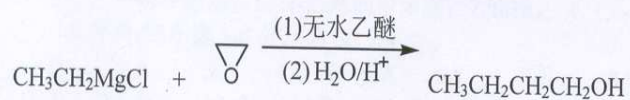
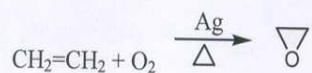
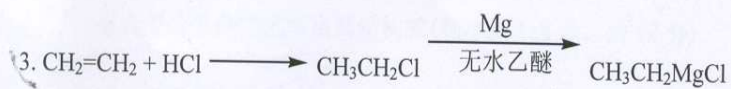
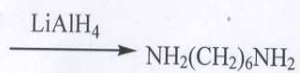
七、由指定原料合成下列化合物，无机试剂可任意选用(20分)

1. 由甲苯合成 3,5-二溴甲苯(5分)
2. 由环己烯合成 1,6-己二胺(5分)
3. 以乙烯为原料合成正丁醇(5分)
4. 由苯和正丁醇为原料合成正丁基苯(5分)



2.





4.

