2006年贵州大学招收攻硕士学位研究生入学考试试题(A)

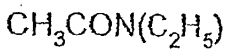
(答案必须答在专用答题纸上)

考试科目代码:420　　考试科目名称:有机化学　　(满分 150 分)

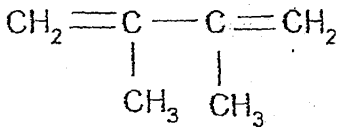
一、命名化合物与根据名称写出结构式　(每题 1 分,共 20 分)

1. 命名下列化合物

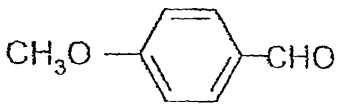
(1)



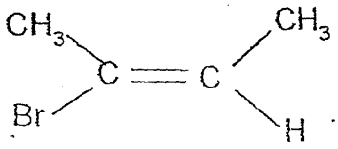
(2)



(3)

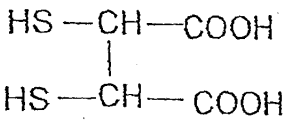


(4)

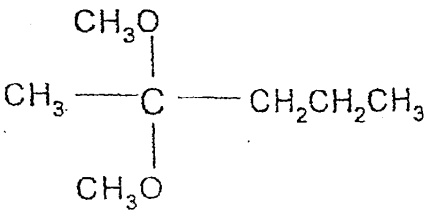


(用 Z,E 表示法命名)

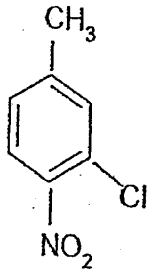
(5)



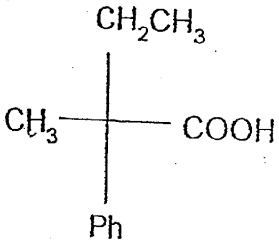
(6)



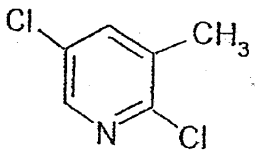
(7)



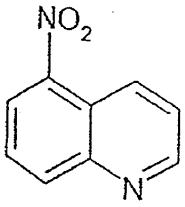
(8)



(9)



(10)



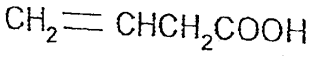
2． 根据名称写出小列化合物结构式

(1). 异戊醇　(2). 2-氨基乙酸　(3). 2,6-二氟苯胺
(4). R-1-苯基乙胺　(5). N-溴代丁二酰亚胺　(6). 乙酰丙酮
(7). 顺丁烯二酸　(8). 8-羟基喹啉　(9). S-3-氨基丁酸
(10). 糠醛

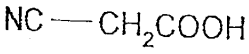
二、填空题（每题3分，共24分）

1. 将下列化合物的酸性强弱排序填入答卷括号内;

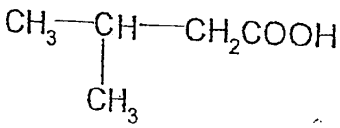
A.



B.

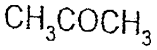


C.

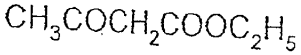


2. 将下列化合物按烯醇化速度排序填入答卷括号内 ;

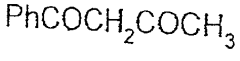
A.



B.



C.

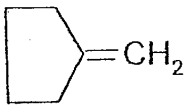


3. 下列化合物哪个具有芳香性?

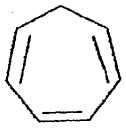
A.

B.

C.

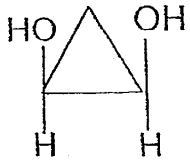


D.

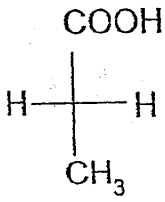


4. 下列化合物哪个具有旋光性?

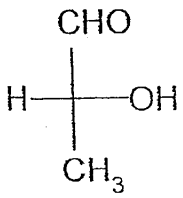
A.



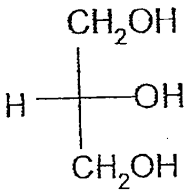
B.



C.

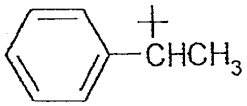


D.

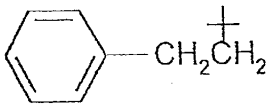


5. 以下正离子哪个更稳定?

A.

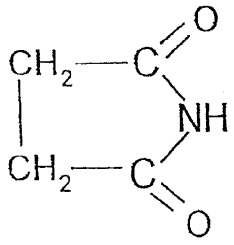


B.



6. 下列化合物哪个酸性更强?

A.



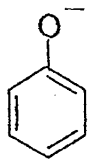
B.

$CH_3CONHC_6H_5$

7. 2-甲基-3--戊醇脱水的主要产物是哪个?

A. 2-甲基-1-戊烯　　B. 2-甲基-戊烷　　C. 2-甲基-2-戊烯
D. 2-甲基-3-戊烯

8. 下列化合物哪个亲核性最强?

B. CH_3COO^-　　C.  　　D. $CH_3CH_2S^-$

$CH_3CH_2O^-$

9. 溴乙烷的 NMR 氢谱图中亚甲基上的质子信号为几重峰?

A. 单重峰　　B. 双重峰　　C. 三重峰　　D. 四重峰

10. 酰胺与次卤酸钠在碱溶液条件下发生霍夫曼(Hofmann)降级反应是生成下列哪一类产物?

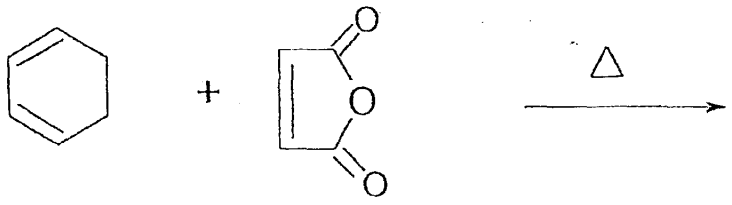
A. 少一个碳原子的酰胺　　B. 羧酸　　C. 羧酸钠　　D. 一级胺

四. 写出下列反应的主要产物,(每题 4 分,共 40 分).

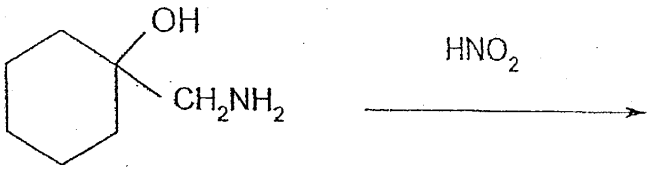
1.

$$C_6H_{13}CH{=}CH_2 \quad + \quad HBr \xrightarrow{\text{过氧化物}}$$

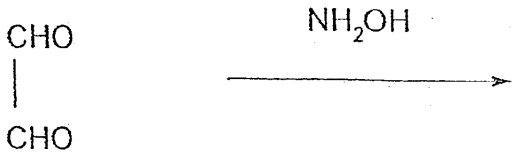
2.



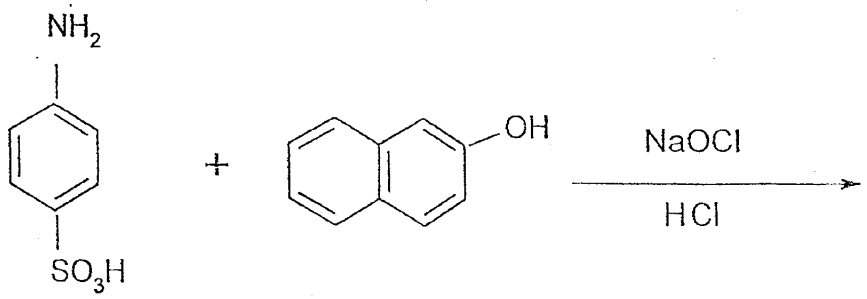
3.


OH
CH_2NH_2
HNO_2

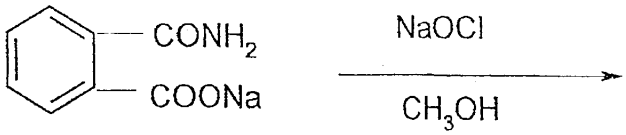
4.


CHO
CHO
NH_2OH

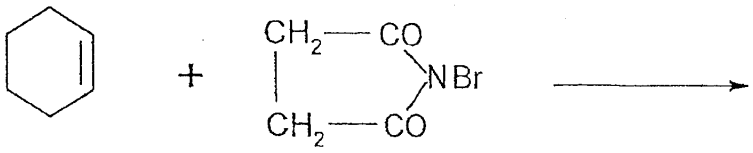
5.


NH_2
SO_3H
OH
NaOCl
HCl

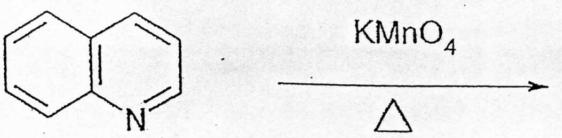
6.


$CONH_2$
COONa
NaOCl
CH_3OH

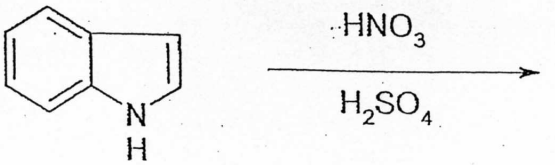
7.


CH_2—CO
CH_2—CO
NBr

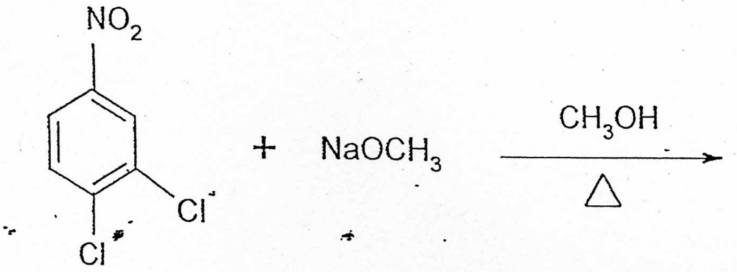
8.



9.

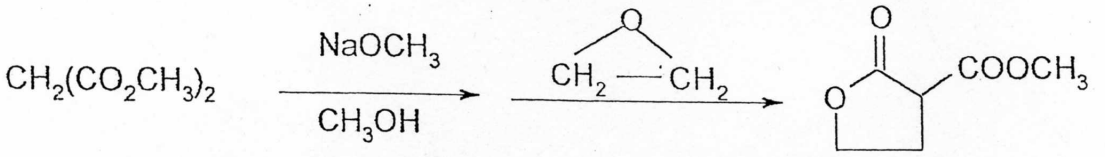


10.

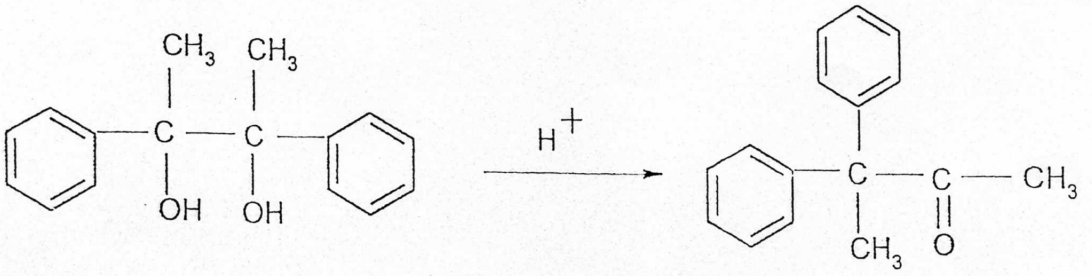


五. 写出下列反应的机理, (每题 8 分, 共 16)

1.



2.



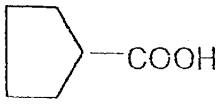
六. 根据所给条件推导出化合物的结构式(写出推导的反应式或解释原因,每题 5 分,共 10 分).

1. 有一化合物 $C_8H_{14}O$ (A), (A)可以很快使溴水褪色,可以和苯肼发生反应, (A)氧化后可以得到一分子丙酮, 及另一化合物(B), (B)具有酸性, 和次碘酸钠反应生成碘仿和一分子酸, 酸的结构式是 $HOOCCH_2CH_2COOH$, 试推导出化合物(A)的结构式.

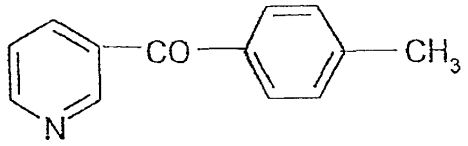
2. 化合物 $C_3H_6Cl_2$ 的核磁共振谱显示有两处吸收信号, 在 3.7 δ 有一组三重峰(面积比是2) 在2.20 δ有一组五重峰(面积比是1), 推导出该化合物的结构.

七. 根据所给的条件,合成指定的化合物, (以反应式表示,每题 5 分,共 20 分).

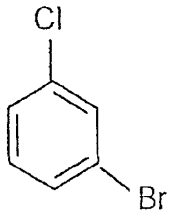
1. 由丙二酸二乙酯,五个碳原子以下的化合物及必要的试剂,合成化合物:



2. 设计合成以下化合物的路线:



3. 以苯为主要起始原料,合成以下化合物:



4. 用乙酰乙酸乙酯为起始原料, 五个碳原子以下的化合物及必要的试剂,合成化合物环己基甲基酮.

[试题结束.]