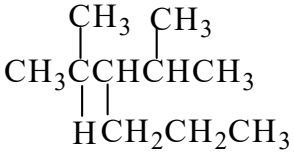
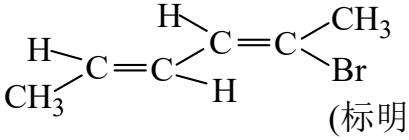
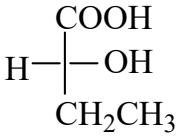
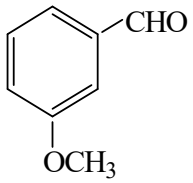
《有机化学》练习题（1）

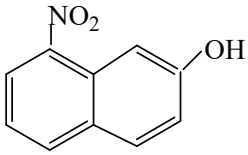
一、 命名下列化合物

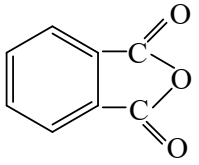
1. 

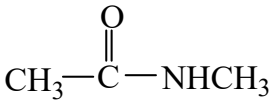
2. 
(标明构型)

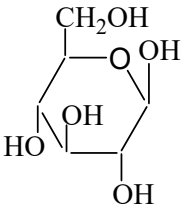
3. 
(标明构型)

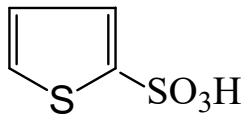
4. 

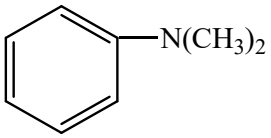
5. 

6. 

7. 

8. 

9. 

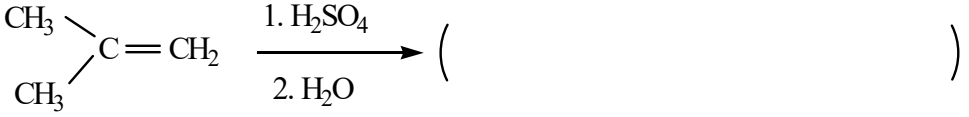
10. 

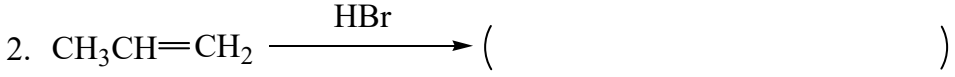
二、写出下列化合物的结构式

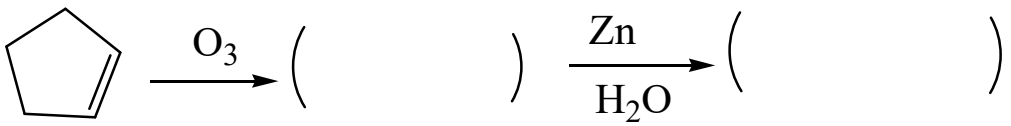
1．烯丙基仲丁基醚　2．顺-1-甲基-4-叔丁基环己烷的稳定构象式

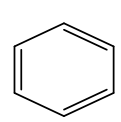
3．苄氯　　4.尿素　　5．4-甲基苯磺酰氯

三、完成下列化学反应式

1. 

2. 

3. 

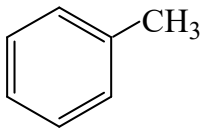
4.  $+CH_3CH_2-\overset{O}{\overset{\|}{C}}-Cl \xrightarrow{AlCl_3}$ (　　)

$\xrightarrow[HCl]{Zn\text{-}Hg}$ (　　)

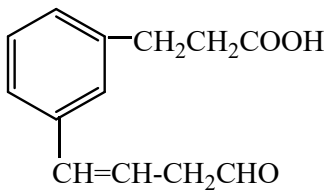
5. $CH_3CH=CH_2 \xrightarrow[500℃]{Cl_2}$ (　　) $\xrightarrow{NaCN}$

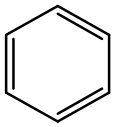
(　　) $\xrightarrow[H^+]{H_2O}$ (　　)

6. $CH_3CH_2CHO \xrightarrow[\triangle]{OH^-}$ (　　) $\xrightarrow{NaBH_4}$ (　　)

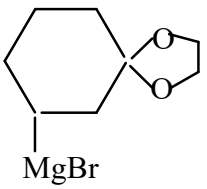
7.  $\xrightarrow{KMnO_4}$ (　　) $\xrightarrow[SOCl_2]{PCl_5}$ (　　)

$\xrightarrow{NH_3}$ (　　) $\xrightarrow{Br_2, NaOH}$ (　　)

8.  $\xrightarrow{LiAlH_4}$ (　　)

9.  $\xrightarrow[H_2SO_4]{HNO_3}$ (　　) $\xrightarrow{Fe+HCl}$ (　　)

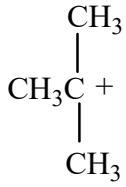
10. $CH_3\underset{HO}{\underset{|}{C}}H\underset{CH_3}{\underset{|}{C}}HCH_3 \xrightarrow[\triangle]{H_2SO_4}$ (　　)

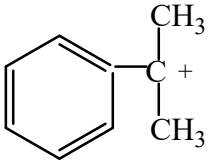
11.  $\xrightarrow[2.\ H_2O,\ H^+]{1.\ HCHO}$ (　　)

四、选择或比较题

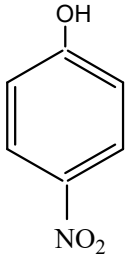
1、下列碳正离子中，稳定性最大的是（　　）

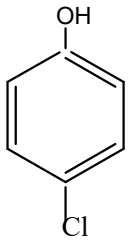
a. $CH_3CH_2\overset{+}{C}HCH_3$　　b. $CH_3CH_2CH_2\overset{+}{C}H_2$

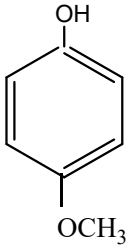
c. 

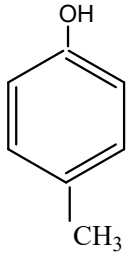
d. 

2、下列化合物中，酸性最强的是（　　）

a. 

b. 

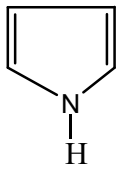
c. 

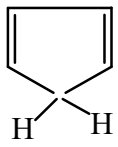
d. 

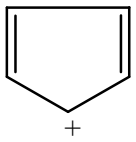
3、下列化合物中，碱性最强的是（　　）

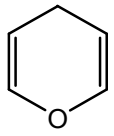
a. CH_3NH_2　　b. $(CH_3)_2NH$　　c. $CH_3\overset{O}{\overset{\|}{C}}\text{-}NH_2$　　d. NH_3

4、下列化合物或离子中，具有芳香性的是（　　）

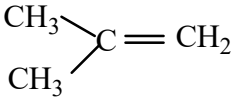
a. 

b. 

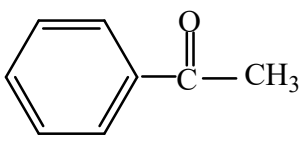
c. 

d. 

5、下列化合物发生亲电加成反应，速度最快的是（　　）

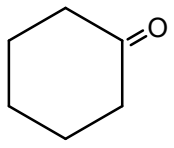
a.  　　b. $CH_3CH{=}CH_2$　　c. $CH_2{=}CH_2$　　d. $CH_3C{\equiv}CH$

6、下列化合物中，既能发生碘仿反应又能与饱和的 $NaHSO_3$ 溶液作用的是（　　）

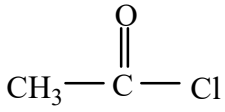
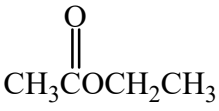
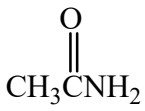
a. 

b. $CH_3CH_2\overset{O}{\overset{\|}{C}}CH_2CH_3$

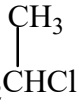
c. $CH_3\overset{O}{\overset{\|}{C}}CH_2CH_2CH_3$

d. 

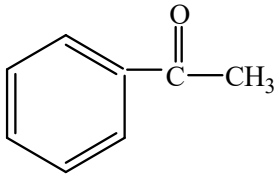
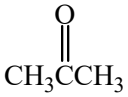
7、比较下列化合物发生水解或醇解反应的速度（　　）

a.  b.  c.  d. $(CH_3CO)_2O$

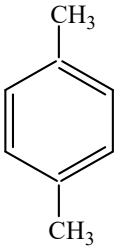
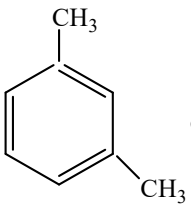
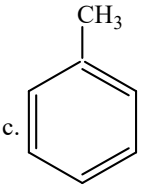
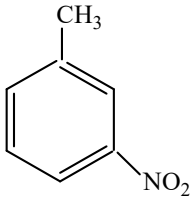
8、比较下列化合物按 S_N1 历程进行水解反应的速度（　　）

a. $CH_3CH_2CH_2CH_2Cl$ b.  c. $(CH_3)_3C—Cl$ d. $CH_3CH_2CH{=}CHCl$

9、比较下列化合物发生亲核加成反应的速度（　　）

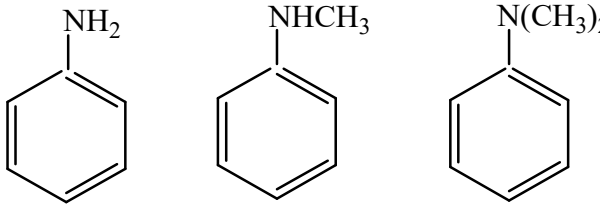
a. CH_3CHO b. Cl_3CCHO c.  d. 

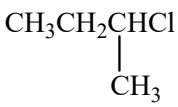
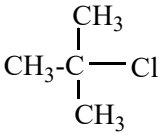
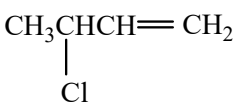
10、比较下列化合物进行卤代或硝化或磺化反应的速度（　　）

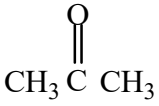
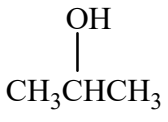
a.  b.  c.  d. 

五、用化学方法鉴别下列各组化合物

1、D-甘露糖，D-果糖（2 分）　　2、甲酸，乙酸（2 分）

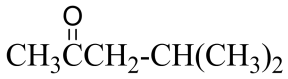
3、  (3分）

4. $CH_3CH_2CH{=}CHCl$    (4分）

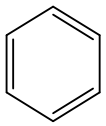
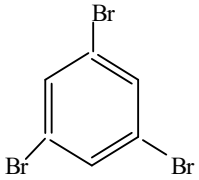
5、  CH_3CH_2CHO  $CH_3CH_2CH_2OH$ (4分）

六、用指定原料合成下列化合物（无机试剂、催化剂、有机溶剂任选）

1、由乙酰乙酸乙酯和丙烯为原料合成



2、由乙烯为原料合成正丁醇（ $CH_3CH_2CH_2CH_2OH$ ）

3、由  为原料合成 

七、推断结构式

1、某化合物的分子式为 $C_6H_{12}O$,能与羟胺作用生成肟，但不能起银镜反应。催化加氢则得到醇，此醇经脱水、臭氧化还原水解后得到两种液体，其中之一能起银镜反应，但不起碘仿反应；另一种有碘仿反应，但不能还原 Fehling 试剂。试推导该化合物的结构式并写出反应式。

2、某化合物 A 的分子式为 C_7H_8O,不溶于 NaOH 水溶液，与金属 Na 不发生反应，但能与浓的 HI 反应生成两个化合物 B 和 C。B 与 $FeCl_3$ 溶液发生显色反应，也能溶于 NaOH 溶液；C 与 $AgNO_3$ 的乙醇溶液作用，生成黄色的 AgI。试推导 A,B,C 的可能结构式并写出各步反应式。