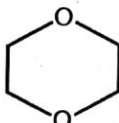



13 PRACTICAL ORGANIC CHEMISTRY

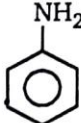
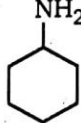
LEVEL - 1

1.  and ; Compounds (X) and (Y) can be differentiated by :

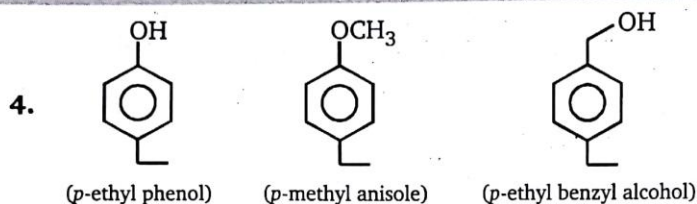
- (a) H_3O^+ , NaOI
(b) H_3O^+ , then Fehling test
(c) H_3O^+ , then Na
(d) Both (b) and (c)

2. Compound $\text{CH}_3 - \text{CH} \begin{matrix} \text{OEt} \\ \text{OEt} \end{matrix}$ and $\text{CH}_3 - \text{CH}_2 - \text{O} - \text{CH}_2 - \text{CH}_3$ can be differentiated by :
(P) (Acetal) (Q)

- (a) H_3O^+ , Na
(b) H_3O^+ , Tollens' test
(c) H_3O^+ , Fehling test
(d) All of these

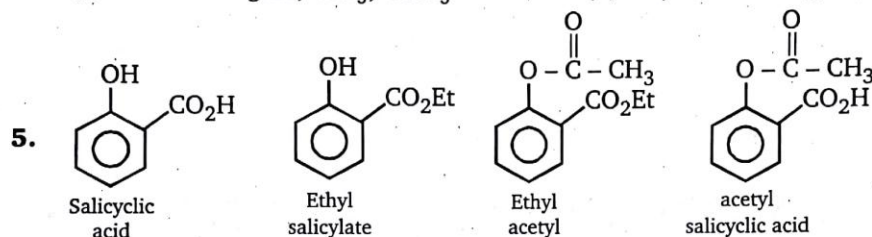
3.  and  can be differentiated by :

- (a) Hinsberg test
(b) Iso-cyanide test
(c) NaNO_2 , HCl, then β -Naphthol
(d) NaOH



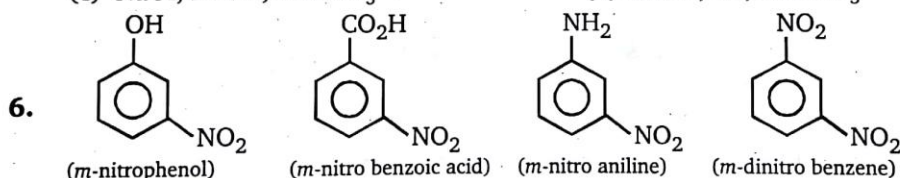
Above compounds can be differentiated by using the reagent:

- (a) NaOH, Tollen's reagent, FeCl₃ (b) CrO₃, Tollen's reagent, FeCl₃
 (c) Tollen's reagent, CrO₃, FeCl₃ (d) Na, Tollen's reagent, FeCl₃



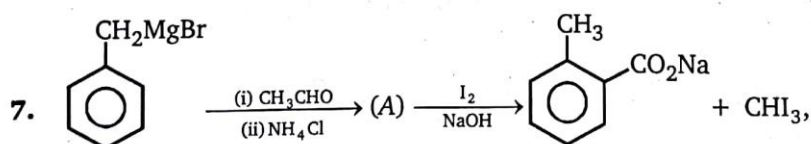
Above compounds can be differentiated by the salicylate. Which of the following chemical test? (used in decreasing order)

- (a) NaOH, FeCl₃, NaHCO₃ (b) aq. NaHCO₃, FeCl₃, NaOH
 (c) NaOI, NaOH, NaHCO₃ (d) NaOH, Na, NaHCO₃

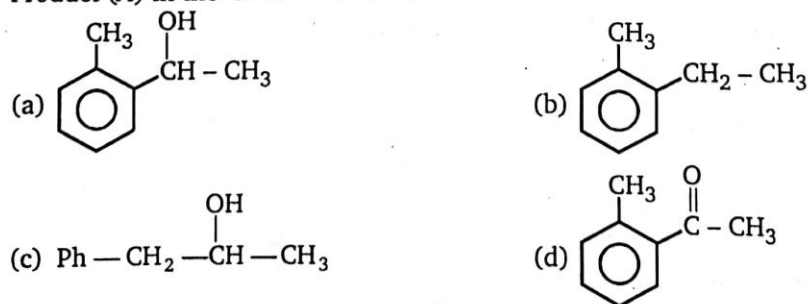


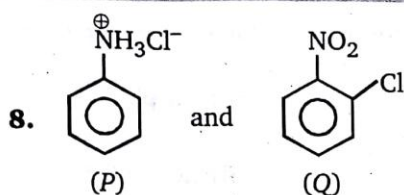
Above compounds can be differentiated by which of the following chemical test? (used in decreasing order)

- (a) NaOH, NaHCO₃, HCl (b) HCl, NaOH, NaHCO₃
 (c) NaHCO₃, NaOH, HCl (d) NaOH, HCl, NaHCO₃

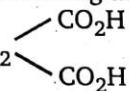
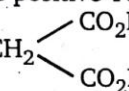
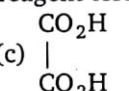
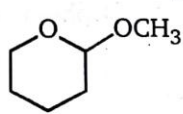
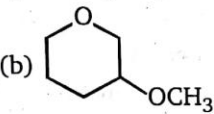
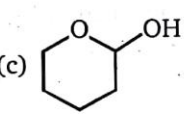
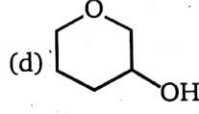


Product (A) in the above reaction is :

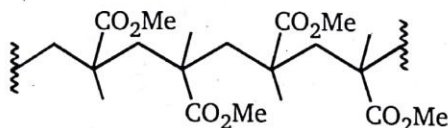




Above compounds (P) & (Q) can be differentiated by :

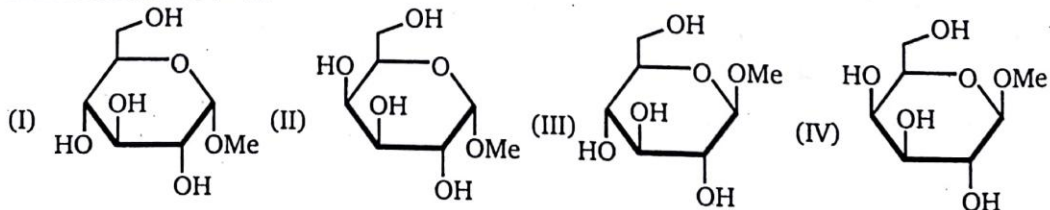
- (a) amm. AgNO_3 (b) NaOH
(c) FeCl_3 (d) Both (a) & (b)
9. Which of following acid give positive Tollen's reagent test.
- (a) $(\text{CH}_2)_2$  (b) CH_2  (c)  (d) HCO_2H
10. Which of following compounds give positive Tollen's test?
- (a)  (b)  (c)  (d) 
11. Give a simple test to differentiate cyclohexane and cyclohexene
(a) $\text{Br}_2/\text{H}_2\text{O}$ (b) Bayer's reagent
(c) Tollen's reagent (d) Both (a) and (b)
12. Give test to differentiate (Bromobenzene) $\text{Ph}-\text{Br}$ and benzyl bromide (PhCH_2Br).
(a) (i) aq. KOH (ii) Na (b) AgNO_3
(c) KMnO_4 (d) All these
13. Give test to differentiate 1,1-dichloroethane and 1, 2-dichloroethane :
(a) 2,4 -DNP then aq. KOH (b) aq. KOH then 2, 4-DNP
(c) NaHSO_3 (d) Lucas reagent
14. Test to differentiate between (CH_3OH) and $(\text{Ph}-\text{OH})$ is/are :
(methanol) (Phenol)
(a) Litmus test (b) FeCl_3
(c) $\text{Br}_2/\text{H}_2\text{O}$ (d) All of these
15. Acetaldehyde and benzaldehyde can be differentiated by :
(a) Fehling test (b) Iodoform test
(c) Tollen's reagent (d) both (a) and (b)
16. Ethylamine and diethylamine cannot be differentiated by :
(a) Hinsberg test (b) carbylamine test
(c) Iodoform test (d) both (a) and (b)
17. Lassaigne's test for the detection of nitrogen will fail in the case of :
(a) NH_2CONH_2 (b) $\text{NH}_2\text{CONHNH}_2 \cdot \text{HCl}$
(c) $\text{NH}_2\text{NH}_2 \cdot \text{HCl}$ (d) $\text{C}_6\text{H}_5\text{NHNH}_2 \cdot 2\text{HCl}$

18. Sodium nitroprusside when added to an alkaline solution of sulphide ions produces a colouration which is :
 (a) red (b) blue (c) brown (d) purple
19. In Kjeldahl's method, nitrogen present is estimated as :
 (a) N_2 (b) NH_3 (c) NO_2 (d) none of these
20. In Kjeldahl's method of estimation of nitrogen, K_2SO_4 acts as :
 (a) an oxidising agent (b) catalytic agent
 (c) hydrolysing agent (d) boiling point elevator
21. The prussian blue colour obtained during the test of nitrogen by Lassaigne's test is due to the formation of :
 (a) $Fe[Fe(CN)_6]_3$ (b) $Na_3[Fe(CN)_6]$
 (c) $Fe(CN)_3$ (d) $Na_4[Fe(CN)_5NOS]$
22. A compound which does not give a positive test in Lassaigne's test for nitrogen is:
 (a) urea (b) hydrazine (c) azobenzene (d) phenyl hydrazine
23. *p*-nitrophenol and *o*-nitrophenol are separated by :
 (a) distillation (b) steam distillation
 (c) crystallization (d) fractional crystallization
24. Which of the following reagent is used for the separation of acetaldehyde from acetophenone ?
 (a) NH_2OH (b) $NaOI$ (c) Tollen's reagent (d) $C_6H_5NHNH_2$
25. The formula of gas is $[CO]_x$. If its vapour density is 70, the value of x will be :
 (a) 2.5 (b) 3.0 (c) 5.0 (d) 6.0
26. The structure of the monomer that would give the following polymer by an addition mechanism is :



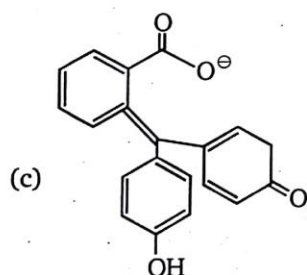
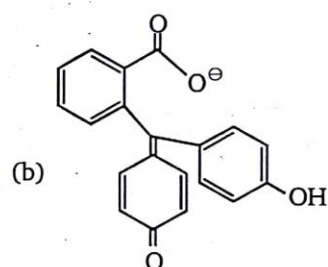
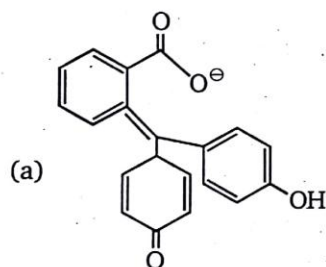
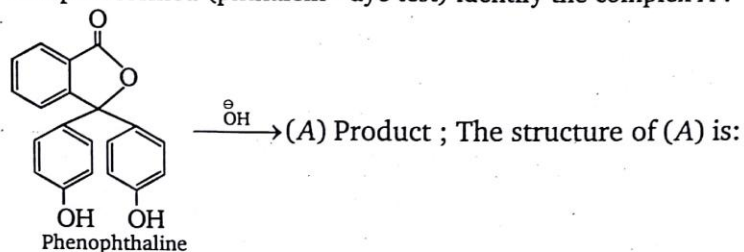
- (a) (b)
- (c) (d)

27. Identify the correct set of stereochemical relationships amongst the following monosaccharides I – IV



- (a) I and II are anomers ; III and IV are epimers
 (b) I and II are epimers ; III and IV are anomers
 (c) I and III are anomers ; I and II are epimers
 (d) I and III are epimers ; II and IV are anomers

28. A dye, phenolphthalein is prepared by reacting phenol with phthalic anhydride in acidic medium. It give pink colour in alkaline medium due to extended conjugation in a new complex formed (phthalein - dye test) identify the complex A :



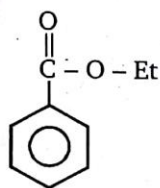
(d) None

| ANSWERS — LEVEL 1 | | | | | | | | | | | | | | | |
|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1. | (d) | 2. | (d) | 3. | (c) | 4. | (b) | 5. | (b) | 6. | (c) | 7. | (a) | 8. | (d) |
| 9. | (d) | 10. | (c) | 11. | (d) | 12. | (d) | 13. | (b) | 14. | (d) | 15. | (d) | 16. | (c) |
| 17. | (c) | 18. | (b) | 19. | (b) | 20. | (d) | 21. | (d) | 22. | (b) | 23. | (a) | 24. | (c) |
| 25. | (c) | 26. | (c) | 27. | (c) | 28. | (b) | | | | | | | | |

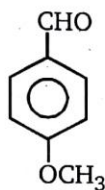
LEVEL-2

1. Comprehension

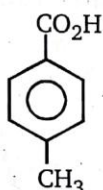
Given are the isomers of $C_8H_8O_2$.



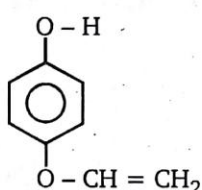
(a)



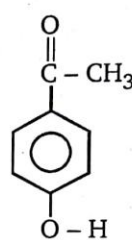
(b)



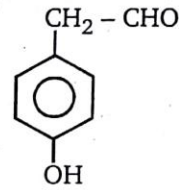
(c)



(d)



(e)



(f)

- A. Which isomer gives positive iodoform test ?
 (a) a (b) b
 (c) d (d) e
- B. Which isomer gives +ive Tollen's test, also reacts with $FeCl_3$?
 (a) b (b) f
 (c) c (d) d
- C. Which isomer reacts with $NaHCO_3$?
 (a) c (b) d
 (c) e (d) f
- D. Which isomer on hydrolysis gives 1, 4-di hydroxybenzene ?
 (a) a (b) d
 (c) e (d) f

2. $Ph-\overset{\overset{O}{\parallel}}{C}-OH \xrightarrow{NaHCO_3^{14}} (A)_{gas}$; $Ph-OH \xrightarrow{Na} (B)_{gas}$
 Sum of molecular mass of gas ($A+B=?$)

ANSWERS — LEVEL 2

1. A - d; B - b; C - a; D - b
 2. 48