



CHEMISTRY

BOOKS - GRB CHEMISTRY (HINGLISH)

PRACTICAL ORGANIC CHEMISTRY

Exercise 1 Only One Correct Answer

1. Carbon and hydrogen are normally detected by strongly heating the organic compound with

A. FeO

B. CaO

C. CuO

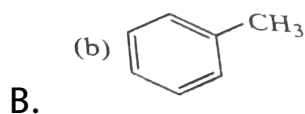
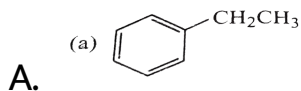
D. MnO

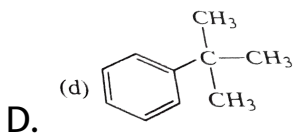
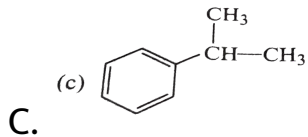
Answer: C

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Exercise 2 More Than One Correct Answer

1. Which of the following aromatic compounds will react with $KMnO_4$?





Answer: A::B::C

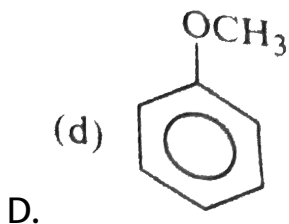
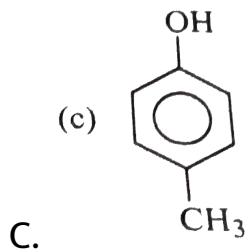
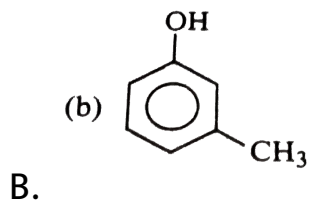
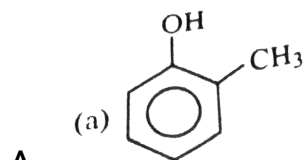
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Exercise 3 Passage 1

1. Compound (A) C_7H_8O is insoluble in aqueous $NaHCO_3$ and dissolves in aqueous NaOH and gives a characteristic colour with neutral $FeCl_3$. When treated

with $Br_2(A)$ forms compound $(B)C_7H_5OBr_3$.

The most probable structure of compound A is :



Answer: B

Passage 2

1. From the following sequence of reactions ,

[A] $(C_6H_{12}) \xrightarrow{HCl} (B)(C_6H_{13}Cl) + (C)(C_6H_{13}Cl)$ react with $AgNO_3$ to give white ppt.

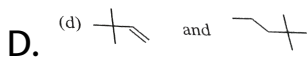
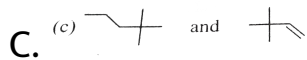
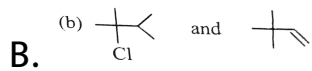
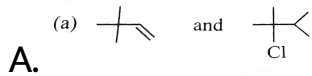
[B] $\xrightarrow{Alc.KOH} (D)$ (An isomer of A) gives positive test with Br_2 / CCl_4

[D] $\xrightarrow{Ozonolysis} (E)$ gives positive iodoform test and negative Fehling's test .

[A] $\xrightarrow{Ozonolysis} (F) + (G)$, both F and G give positive Tollen's test .

[F] + [G] $\xrightarrow[\Delta]{Conc.NaOH} HCOONa + \text{alcohol}$

The structure A and B respectively are :



Answer: A

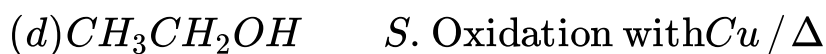
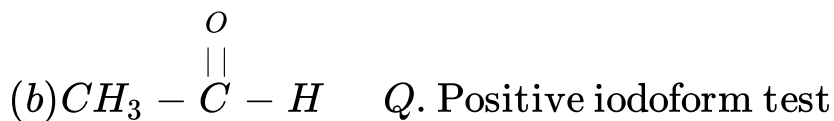
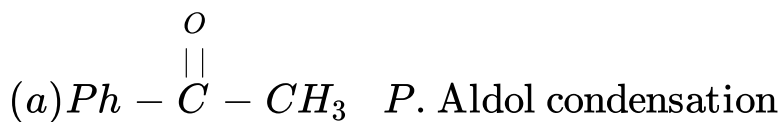
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Exercise 4 Matrix Match Type

1.

Column(I)

Column(II)



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Others

1. Lassigne's test is not used for the detection of :

A. N

B. S

C. Cl

D. O

Answer: D



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2. When an organic compound is present in aqueous medium and is less soluble in any organic solvent, then it is separated by :

A. continous extraction

B. distillation

C. chromatography

D. sublimation

Answer: A

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3. Ammonium molybdate is used for detection of which element in organic compound :

A. C

B. N

C. P

D. S

Answer: C

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4. A white crystalline solid 'X' give following chemical test

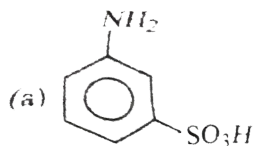
:

(i) it liberates CO_2 with $NaHCO_3$

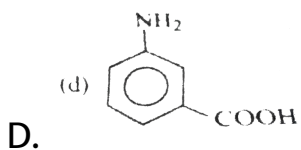
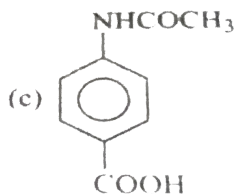
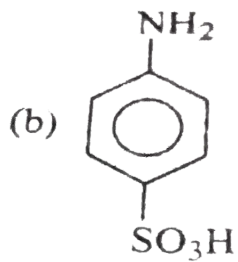
(ii) it forms a coloured dye on diazotisation and coupling with β -naphthol

(iii) with Br_2 water it forms white precipitate fo 2 ,4 ,6 tribromo aniline .

'X' can be identified as :



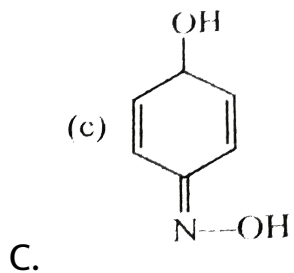
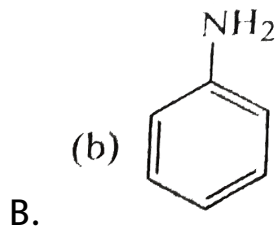
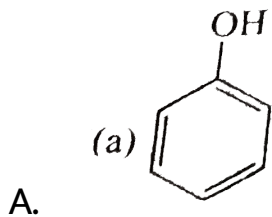
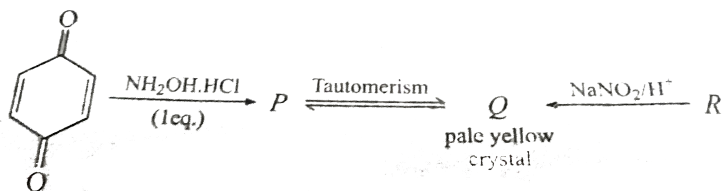
A.

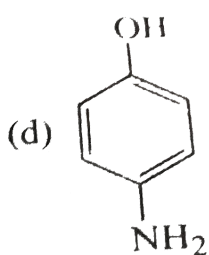


Answer: B

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5. Identify the reactant 'R'



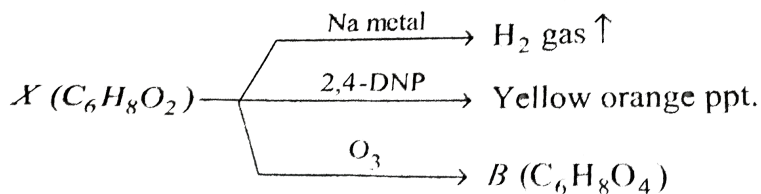


D.

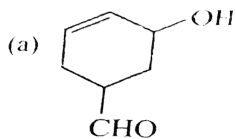
Answer: A

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6. Compound 'X' give following reactions

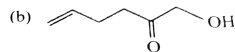


Its structure can be :

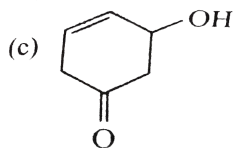


A.

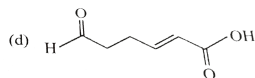
B.



C.



D.



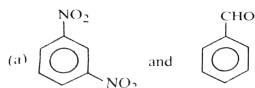
Answer: C

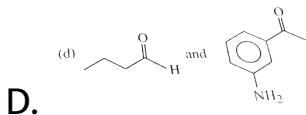
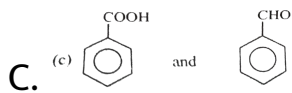
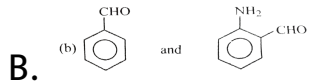


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7. A mixture of two organic compound gives red coloured precipitate with cuprous chloride and silver mirror on heating with Zn and NH_4Cl followed by $AgNO_3 + NH_4OH$ solution . The mixture contains :

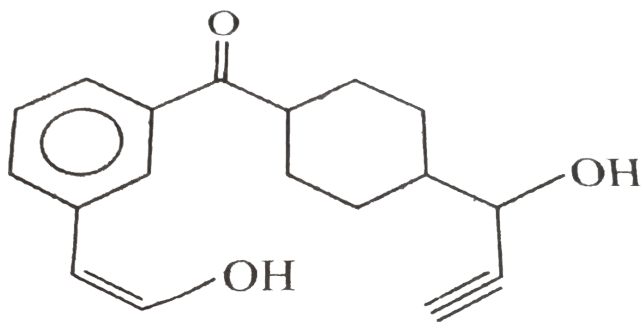
A.





Answer: A

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8.

which of the following reagents will not react with above compound?

A. Na metal

B. $AgNO_3 + NH_4OH$

C. $Cu_2Cl_2 + NH_4OH$

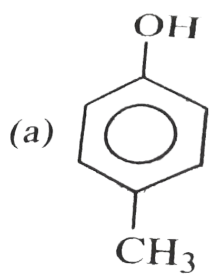
D. $NaHCO_3$

Answer: D

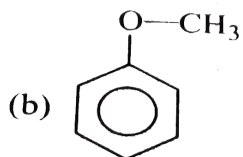


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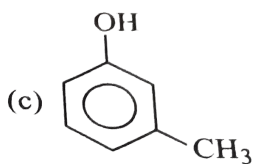
9. Compound 'P', C_7H_8O is insoluble in water, dilute HCl and $NaHCO_3$ it does not dissolve in dilute $NaOH$ P is treated with $Br_2 - H_2O$ it converts rapidly into a compound of formula $C_7H_5OBr_3$ Identify structure of P?



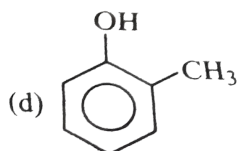
A.



B.



C.

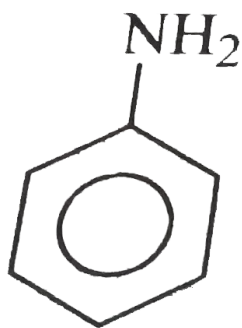


D.

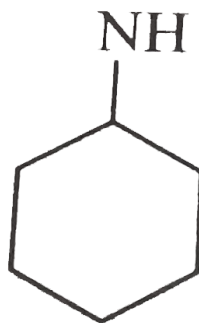
Answer: C



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and



10.

can be differentiated by :

A. carbylamine reaction

B. H_2SO_4

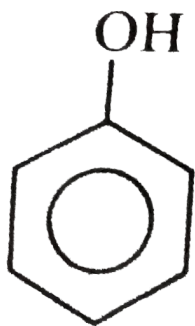
C. diazotisation followed by β -naphthol

D. mustard oil reaction

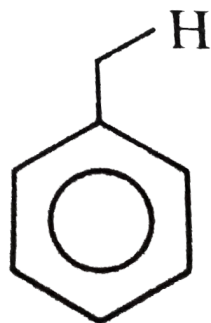
Answer: C



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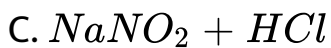
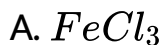


and



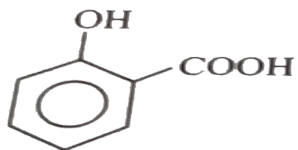
11.

can be differentiated by :

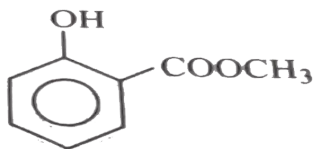


Answer: A

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and



12. _____ can be differentiated by :

A. NaOH

B. Na metal

C. $NaHCO_3$

D. $FeCl_3$

Answer: C



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can be differentiated by :

A. carbylamine reaction

B. iodoform test

C. cold $KMnO_4$

D. $Br_2 - H_2O$

Answer: A



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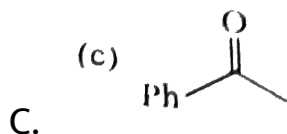
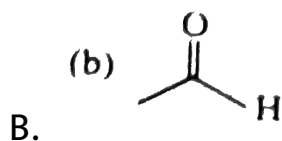
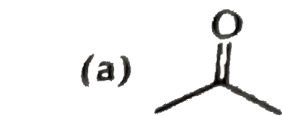
14. $CH_3 - \overset{O}{\parallel}C - H$ and $Ph - \overset{O}{\parallel}C - H$ can be differentiated by :

- A. Tollen's reagent
- B. Fehling's solution
- C. Lucas reagent
- D. Victor meyer's test

Answer: B

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15. Compound 'X' give positive test with 2,4- DNP and with $I_2 / NaOH$ compound (X) may be :



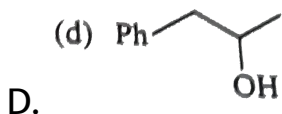
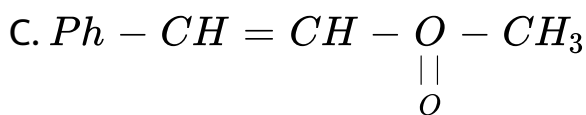
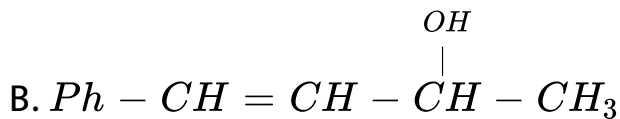
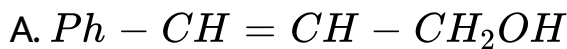
D. all of these

Answer: D

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16. An organic compound containing one oxygen gives red colour with ceric ammonium nitrate solution ,

decolourise alkaline $KMnO_4$, respond iodoform test and show geometrical isomerism. It should be :



Answer: B



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17. Which of the following is true ?

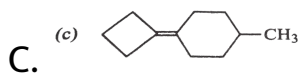
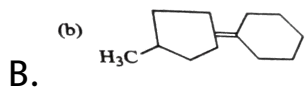
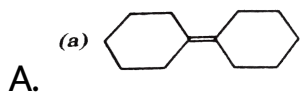
- A. Alcohol give red colour with ceric ammonium nitrate
- B. Aldehyde and ketone give orange red colour with 2,4-DNP
- C. RCOOH give CO_2 with NaHCO_3
- D. All are true

Answer: D

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18. Compound (A) $\text{C}_{12}\text{H}_{20}$ discharges the colour of $\text{Br}_2 - \text{H}_2\text{O}$ and cold KMnO_4 . On reduction with H_2/Pt

it gives compound (B) $C_{12}H_{22}$. A on ozonolysis give cyclohexanone. Find structure of A :



D. None of these

Answer: A

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19. Which of the following is true?

A. Tollen's reagent gives a positive test with all aldehyde

B. Fehling's solution gives a positive test with all

C. Tollen's reagent gives a positive test with all caroxylic acid

D. Tollen's reagent gives a positive test with α -methyl keto

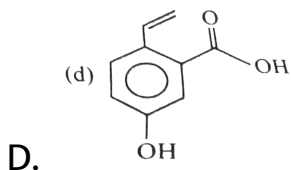
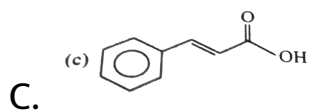
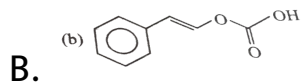
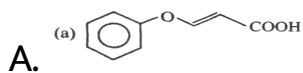
Answer: A

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20. A monocarboxylic acid decolourise $Br_2 - H_2O$, on heating with soda lime derivate of styrene is formed ,

with neutral $FeCl_3$, a buff coloured precipitate is formed

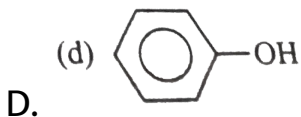
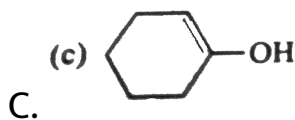
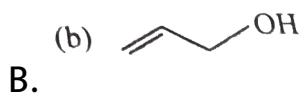
. Acid could be :



Answer: D

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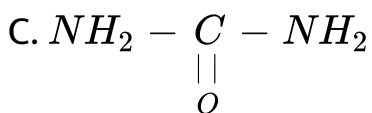
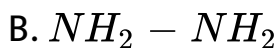
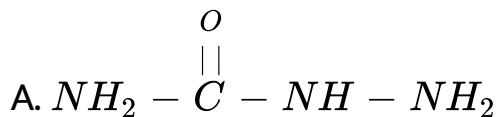
21. Which of the following compounds decolourise $Br_2 - H_2O$ and also give positive test with neutral $FeCl_3$:



Answer: C

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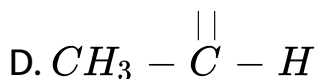
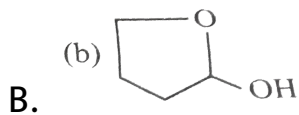
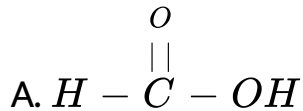
22. Lassaigne's test for the detection of N fails in :



Answer: B

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23. Which of the following compounds give positive test with Tollen's reagent ?

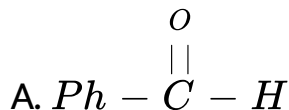


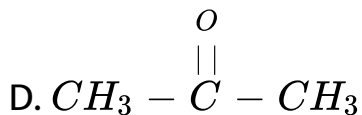
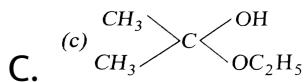
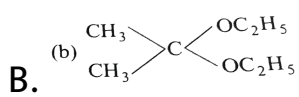
Answer: A::B::C::D



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24. Which of the following compound give negative test with Tollen's reagent ?





Answer: B::C::D

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25. Which of the following reagents cannot be used for differentiation between glucose and fructose ?

A. Lucas reagent

B. $\text{Br}_2 - \text{H}_2\text{O}$

C. Tollen's reagent

D. 2,4- DNP

Answer: A:C

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26. Which of the following reagents can be used to differentiate between $Ph - \underset{\begin{array}{c} || \\ O \end{array}}{C} - H$ and CH_3CH_2OH ?

A. NaOI

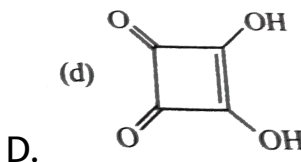
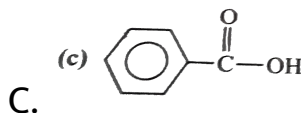
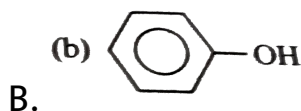
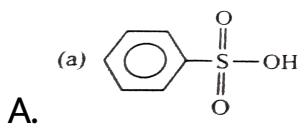
B. Fehling's solution

C. Tollen's reagent

D. $ZnCl_2 / H$

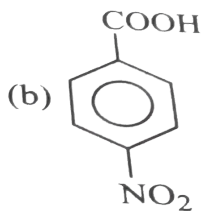
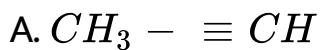
Answer: A:B

27. Which of the following compounds produce CO_2 on reaction with $NaHCO_3$?

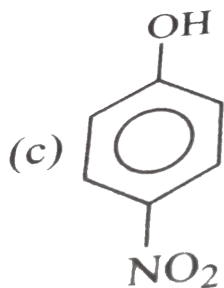


Answer: A::C::D

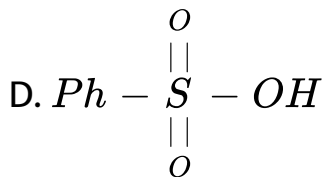
28. Which of the following compounds will react with NaNH_2 ?



B.

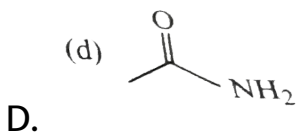
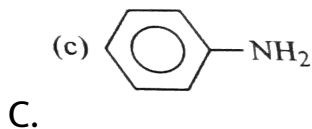
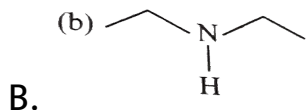
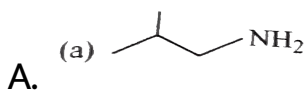


C.



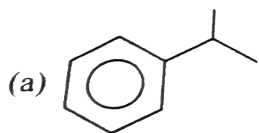
Answer: A::B::C::D

29. Which of the following compounds will give isocyanide on reaction with $CHCl_3 + KOH$?

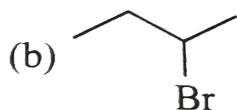


Answer: A:C

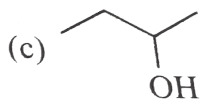
30. Which of the following compounds may give reaction with acidic $KMnO_4$?



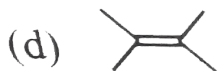
A.



B.



C.



D.

Answer: A::C::D



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31. Which of the following reagents can be used to differentiate 1° and 3° alcohols ?

A. pcc

B. $K_2Cr_2O_7 / H^\oplus$

C. Jones reagent

D. $Br_2 - H_2O$

Answer: A::B::C



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32. Which of the following reagents cannot be used for differentiation between CH_3CHO and $CH_3 - \underset{\begin{array}{c} || \\ O \end{array}}{C} - Ph$?

A. NaOI

B. Tollen's agent

C. $H_2N - OH$

D. $Ph - NH - NH_2$

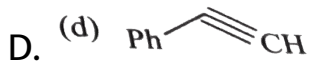
Answer: A::C::D

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33. Which of the following will not give white precipitate with ammoniacal silver nitrate solution ?

A. $CH_3 - C \equiv C - CH_3$

B. 



Answer: A::B::C

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34. Which of the following tests can be used for differentiation among 1° , 2° and 3° alcohol?

- A. Lucas test
- B. Victor meyer's test
- C. $\text{Cu}/300^\circ \text{C}$
- D. Haloform reaction

Answer: A::B::C

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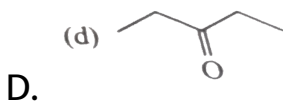
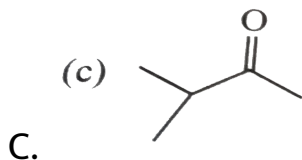
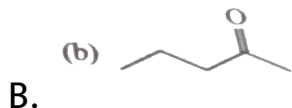
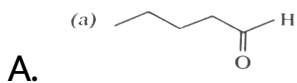
35. Which of the following test can be used for identification of 1° amine ?

- A. Carbylamine test
- B. Hofmann mustard oil reaction
- C. $NaNO_2 / HCl$
- D. Fehling's solution

Answer: A::B::C

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36. Unknown compound (A) $C_5H_{10}O$ gives positive test with 2,4-DNP but negative test with Tollen's reagent . It also give yellow precipitate with $I_2 / NaOH$. (A) is :

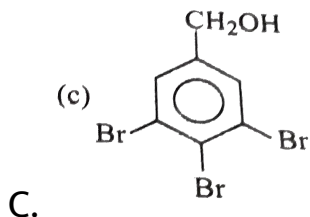
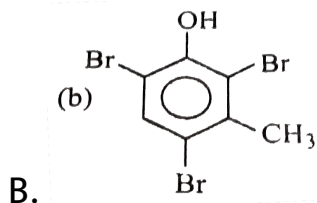
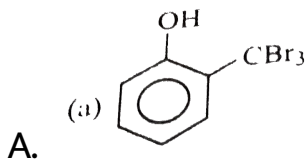


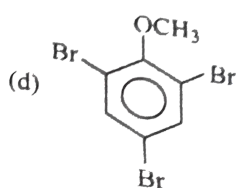
Answer: B::C

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37. Compound (A) C_7H_8O is insoluble in aqueous $NaHCO_3$ and dissolves in aqueous NaOH and gives a characteristic colour with neutral $FeCl_3$. When treated with Br_2 (A) forms compound (B) $C_7H_5OBr_3$.

The structure of compound (B) would be :



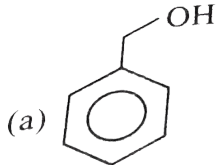


Answer: B

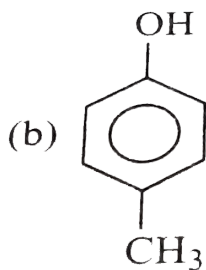
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38. Compound (A) C_7H_8O is insoluble in aqueous $NaHCO_3$ and dissolves in aqueous NaOH and gives a characteristic colour with neutral $FeCl_3$. When treated with Br_2 (A) forms compound (B) $C_7H_5OBr_3$.

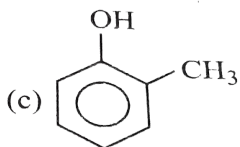
What could be the structure of compound (A) if neither dissolves in aq. $NaHCO_3$ nor gives a characteristic colour with $FeCl_3$?



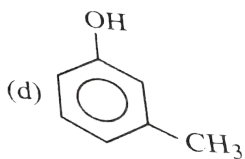
A.



B.



C.

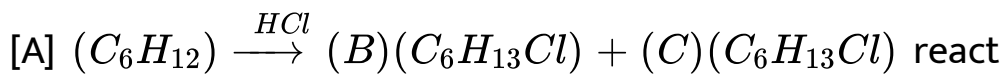


D.

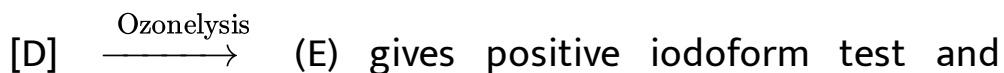
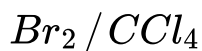
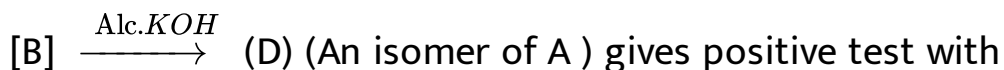
Answer: A:B

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39. From the following sequence of reactions ,



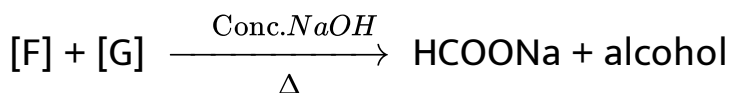
with $AgNO_3$ to give white ppt.



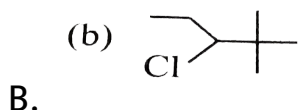
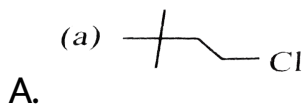
negative Fehling's test .

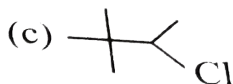


test .

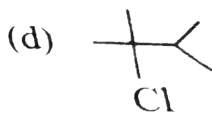


The structure of C is :





C.



D.

Answer: C

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40. From the following sequence of reactions ,

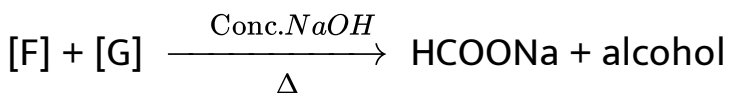
[A] $(C_6H_{12}) \xrightarrow{HCl} (B)(C_6H_{13}Cl) + (C)(C_6H_{13}Cl)$ react with $AgNO_3$ to give white ppt.

[B] $\xrightarrow{Alc.KOH}$ (D) (An isomer of A) gives positive test with Br_2 / CCl_4

[D] $\xrightarrow{Ozonolysis}$ (E) gives positive iodoform test and

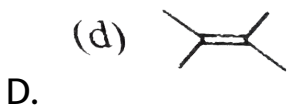
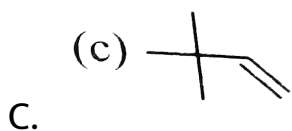
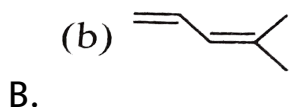
negative Fehling's test .

[A] $\xrightarrow{\text{Ozonolysis}}$ (F) + (G) , both F and G give positive Tollen's test .



The reaction involve in F and G with the NaOH is :

The structure of compound D is :



Answer: D

41. From the following sequence of reactions ,

[A] $(C_6H_{12}) \xrightarrow{HCl}$ (B) $(C_6H_{13}Cl)$ + (C) $(C_6H_{13}Cl)$ react with $AgNO_3$ to give white ppt.

[B] $\xrightarrow{Alc.KOH}$ (D) (An isomer of A) gives positive test with Br_2 / CCl_4

[D] $\xrightarrow{Ozonolysis}$ (E) gives positive iodoform test and negative Fehling's test .

[A] $\xrightarrow{Ozonolysis}$ (F) + (G) , both F and G give positive Tollen's test .

[F] + [G] $\xrightarrow[\Delta]{Conc.NaOH}$ $HCOONa$ + alcohol

The reaction involve in F and G with the NaOH is :

The reaction involve in the F and G with NaOH is :

A. Reimer- Tiemann reaction

B. Aldol condensation

C. Cannizzaro reaction

D. Perkin reaction

Answer: C



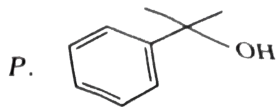
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Column (I)

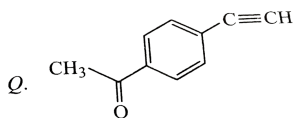
Column (II)

42.

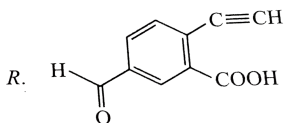
(a) NaHCO_3



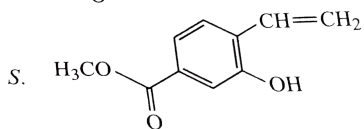
(b) Na metal



(c) 2,4,-Dinitrophenyl hydrazine

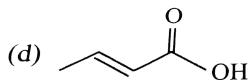
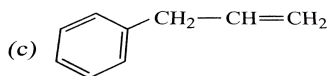
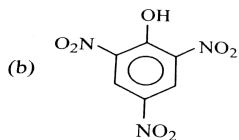
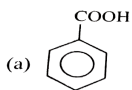


(d) Lucas reagent



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3. Column (I)



Column (II)

P. Decolourise Br₂ water

Q. Effervescence of CO₂ on reaction with NaHCO₃

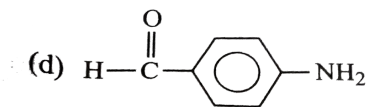
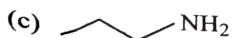
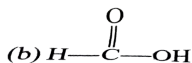
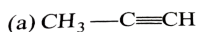
R. Oxidation with alkaline KMnO₄

S. React with Na metal

43.

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4. Column (I)



Column (II)

P. Positive test with Fehling's solution

Q. Positive test with Tollen's reagent

R. Decolourise Br₂-H₂O

S. Isocyanide test

44.

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Column (I)	Column (II)
(a) $\text{H}_3\text{C}-\text{C}_6\text{H}_4-\text{CHO} + 2,4\text{-DNP}$	P. Yellow
(b) $\text{Ph}-\overset{\text{O}}{\parallel}{\text{C}}-\text{CH}_3 + \text{I}_2/\text{OH}^\ominus$	Q. Orange
(c) $\text{>C}-\text{NO}_2 + \text{HNO}_2$	R. Violet
(d) $\text{>C}(\text{OH})=\text{C} + \text{FeCl}_3$	S. Blue

45.

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Column(I)

Column(II)

(a) Presence of halogen

P. $\text{HNO}_3 / \text{AgNO}_3$

46. (b) Presence of sulphur

Q. $\text{Na}_2[\text{Fe}(\text{CN})_5\text{NO}]$

(c) Presence of nitrogen

R. $\text{Co}(\text{NO}_3)_2$

(d) Presence of P and S

S. FeCl_3

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