| Date Planned : __ / __ / __ | Daily Tutorial Sheet-1 | Expected Duration : 45 Min |
|---|---|---|
| Actual Date of Attempt : __ / __ / __ | JEE Main (Archive) | Exact Duration :_____ |

**1.** The reagent with which both acetaldehyde and acetone react easily is : **(1981)**

**(A)** Tollen's reagent **(B)** Schiff's reagent

**(C)** Grignard's reagent **(D)** Fehling's reagent

**2.** Which of the following has the most acidic hydrogen? **(2000)**

**(A)** 3-hexanone **(B)** 2, 4-hexanedione

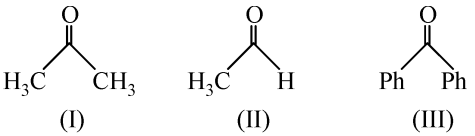
**(C)** 2, 5-hexanedione **(D)** 2, 3-hexanedione

**3.** A mixture of benzaldehyde and formaldehyde on heating with aqueous NaOH solution gives : **(2001)**

**(A)** Benzyl alcohol and sodium formate **(B)** Sodium benzoate and methyl alcohol

**(C)** Sodium benzoate and sodium formate **(D)** Benzyl alcohol and methyl alcohol

**4.** The order of reactivity of phenyl magnesium bromide with the following compounds is : **(2004)**

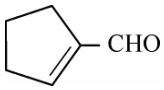
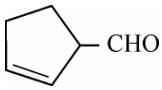
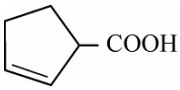
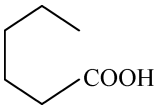


(I) (II) (III)

**(A)** (II) > (III) > (I) **(B)** (I) > (III) > (II)

**(C)** (II) > (I) > (III) **(D)** All of these

**5.** Cyclohexene on ozonolysis followed by reaction with zinc dust and water gives compound E. Compound E on further treatment with aqueous KOH yields compound F. Compound F is : **(2007)**

**(A)**  **(B)**  **(C)**  **(D)** 

**6.** In the Cannizzaro reaction given below, $2PhCHO \xrightarrow{-OH} PhCH_2OH + PhCO_2^-$ the slowest step is :

**(A)** The attack of $-OH$ at the carbonyl group **(2009)**

**(B)** The transfer of hydride to the carbonyl group

**(C)** The abstraction of proton from the carboxylic acid

**(D)** The deprotonation of $PhCH_2OH$

**7.** Trichloroacetaldehyde was subjected to Cannizzaro's reaction by using NaOH. The mixture of the products contains sodium trichloroacetate ion and another compound. The other compound is: **(2011)**

**(A)** 2, 2, 2-trichlorehanol **(B)** trichloromethanol

**(C)** 2, 2, 2-trichloropropanol **(D)** chloroform

**8.** The most suitable reagent for the conversion of $R-CH_2-OH \rightarrow R-CHO$ is : **(2014)**

**(A)** $KMnO_4$ **(B)** $K_2Cr_2O_7$

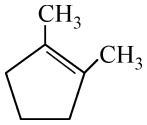
**(C)** $CrO_3$ **(D)** PCC (pyridinium chlorochromate)

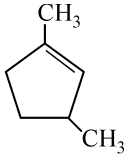
**9.** In the reaction, $CH_3CHO \xrightarrow[H_2O]{NaBH_4} A \xrightarrow{PCl_5} B \xrightarrow{Alc.\ KOH} C$. The product C is : **(2014)**

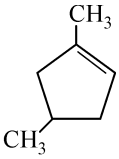
**(A)** ethyl alcohol **(B)** acetylene

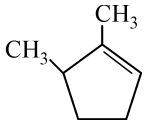
**(C)** ethylene **(D)** acetyl chloride

**10.** Which compound would give 5-keto-2-methyl hexanal upon ozonolysis ? **(2015)**

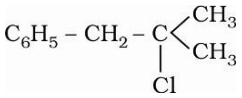
**(A)** 

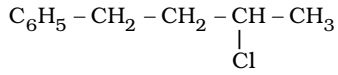
**(B)** 

**(C)** 

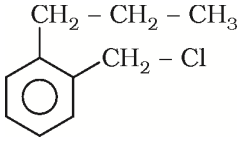
**(D)** 

**11.** A compound A with molecular formula $C_{10}H_{13}Cl$ gives a white precipitate on adding silver nitrate solution. A on reacting with alcoholic KOH gives compound B as the main product. B on ozonolysis gives C and D. C gives Cannizzoro's reaction but not aldol condensation. D gives aldol condensation but not Cannizzoro's reaction. A is : **(2015)**

**(A)** 

**(B)** 

**(C)** $C_6H_5-CH_2-CH_2-CH_2-CH_2-Cl$

**(D)** 

**12.** In the reaction $2CH_3CHO \xrightarrow{OH^-} A \xrightarrow{\Delta} B$; the product B is : **(2015)**

**(A)** $CH_3-CH_2-CH_2-CH_2-OH$

**(B)** $CH_3-CH=CH-CHO$

**(C)** $CH_3-\overset{\overset{O}{\|}}{C}-CH_3$

**(D)** $CH_3-CH_2-CH_2-CH_3$

**13.** In the following sequence of reactions Toluene $\xrightarrow{KMnO_4}$ A $\xrightarrow{SOCl_2}$ B $\xrightarrow[BaSO_4]{H_2/Pd}$ C , the product C is: **(2015)**

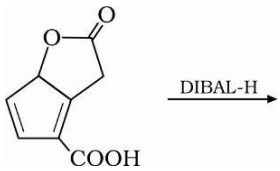
**(A)** $C_6H_5COOH$

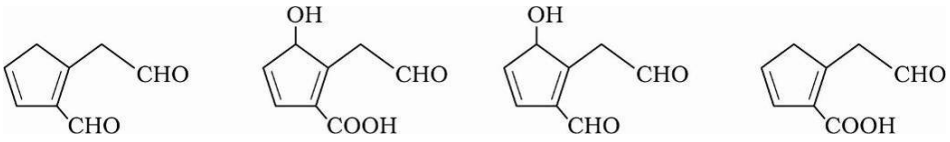
**(B)** $C_6H_5CH_3$

**(C)** $C_6H_5CH_2OH$

**(D)** $C_6H_5CHO$

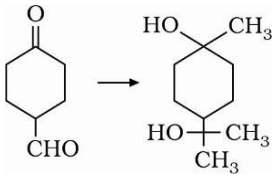
**14.** The major product obtained in the following reaction is : **(2017)**



**(A)** **(B)** **(C)** **(D)**

**15.** The correct sequence of reagents for the following conversion will be : **(2017)**

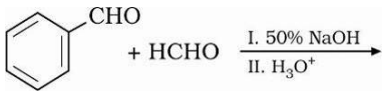


**(A)** $\left[Ag(NH_3)_2\right]^+ OH^-$, $CH_3MgBr$, $H^+ / CH_3OH$

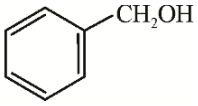
**(B)** $\left[Ag(NH_3)_2\right]^+ OH^-$, $H^+ / CH_3OH$, $CH_3MgBr$

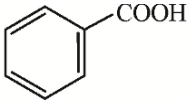
**(C)** $CH_3MgBr$, $H^+ / CH_3OH$, $\left[Ag(NH_3)_2\right]^+ OH^-$

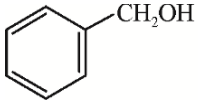
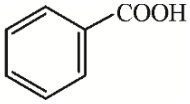
**(D)** $CH_3MgBr$, $\left[Ag(NH_3)_2\right]^+ OH^-$, $H^+ / CH_3OH$

**16.** Major products of the following reactions are:  **(2019)**

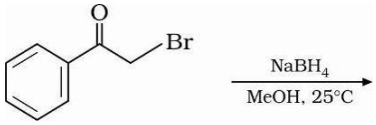
**(A)** $CH_3OH$ and $HCO_2H$

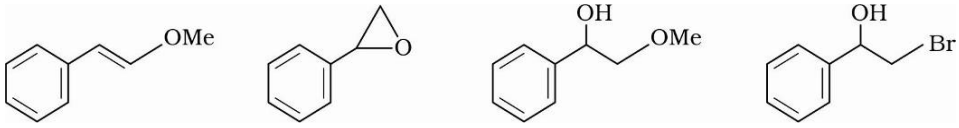
**(B)** HCOOH and 

**(C)** $CH_3OH$ and 

**(D)**  and 

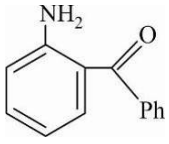
**17.** The major product of the following reaction is : **(2019)**

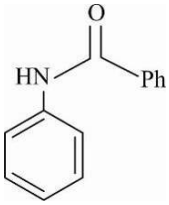


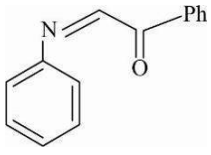


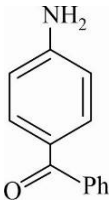
**(A)** **(B)** **(C)** **(D)**

**18.** The major product 'Y' in the following reaction is: **(2019)**

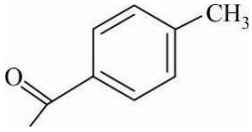
**(A)** 

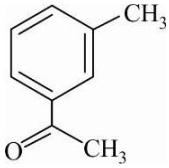
**(B)** 

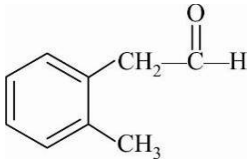
**(C)** 

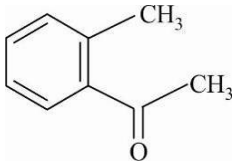
**(D)** 

**19.** Compound $A(C_9H_{10}O)$ shows positive iodoform test. Oxidation of A with $KMnO_4$ / KOH gives acid $B(C_8H_6O_4)$. Anhydride of B is used for the preparation of phenolphthalein. Compound A is: **(2019)**

**(A)** 

**(B)** 

**(C)** 

**(D)** 

**20.** In the following reaction, carbonyl compound $+MeOH \overset{HCl}{\rightleftharpoons}$ acetal. Rate of the reaction is the highest for: **(2019)**

**(A)** Acetone as substrate and methanol in excess

**(B)** Propanal as substrate and methanol in excess

**(C)** Propanal as substrate and methanol in stoichiometric amount

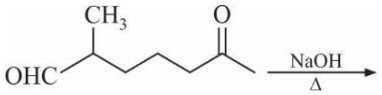
**(D)** Acetone as substrate and methanol in stoichiometric amount

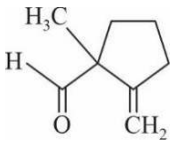
**21.** Which of the following compounds will show the maximum 'enol' content? **(2019)**

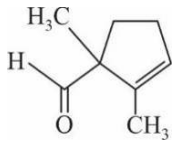
**(A)** $CH_3COCH_2COCH_3$ **(B)** $CH_3COCH_2CONH_2$

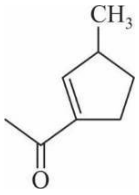
**(C)** $CH_3COCH_2COOC_2H_5$ **(D)** $CH_3COCH_3$

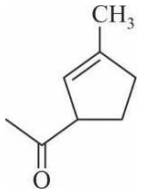
**22.** The major product obtained in the following reaction is : **(2019)**



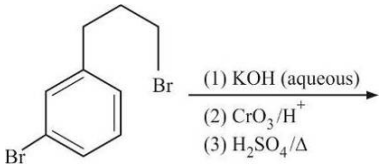
**(A)** 

**(B)** 

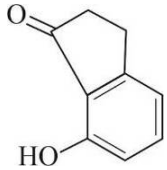
**(C)** 

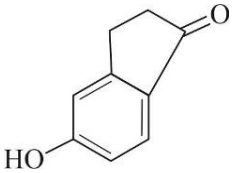
**(D)** 

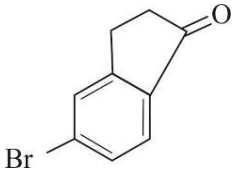
**23.** The major product of the following reaction is : **(2019)**



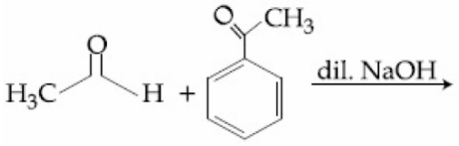
**(A)** 

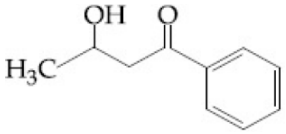
**(B)** 

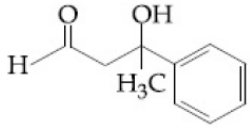
**(C)** 

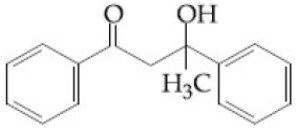
**(D)** 

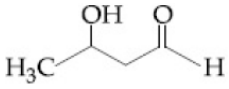
**24.** The major product formed in the following reaction is : **(2019)**




**(A)** 

**(B)** 

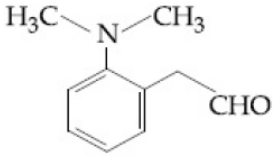
**(C)** 

**(D)** 

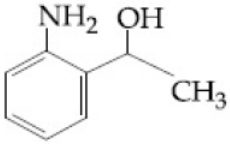
**25.** The tests performed on compound X and their inference are : **(2019)**

| | **Test** | **Inference** |
|---|---|---|
| **(a)** | 2, 4-DNP test | Coloured precipitate |
| **(b)** | Iodoform test | Yellow precipitate |
| **(c)** | Azo-dye test | No dye formation |

Compound 'X' is :



**(A)**



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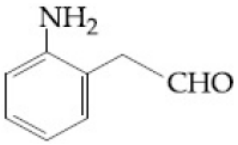
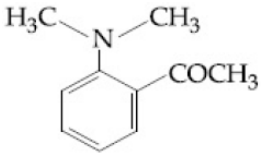
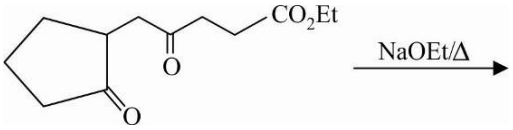


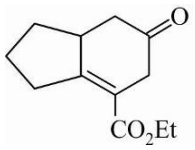
**(C)**

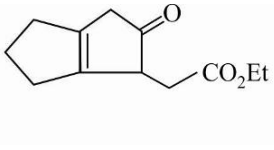


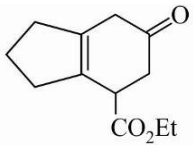
**(D)**

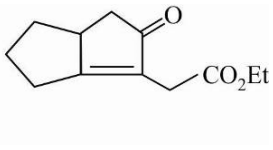
**26.** The major product obtained in the following reaction is : **(2019)**



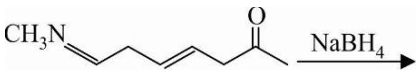

**(A)** 

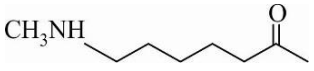
**(B)** 

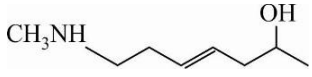
**(C)** 

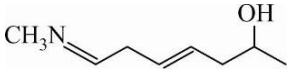
**(D)** 

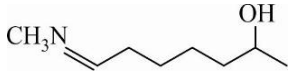
**27.** The major product of the following reaction is : **(2019)**



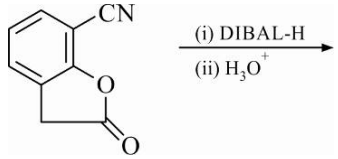

**(A)** 

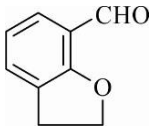
**(B)** 

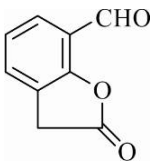
**(C)** 

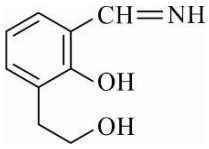
**(D)** 

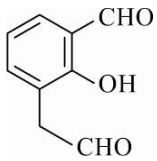
**28.** The major product of the following reaction is : **(2019)**



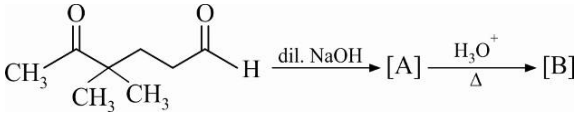

**(A)** 

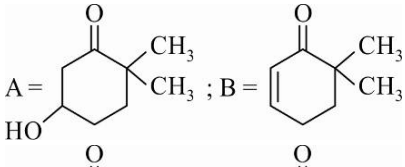

**(B)** 

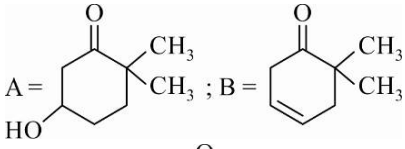

**(C)** 

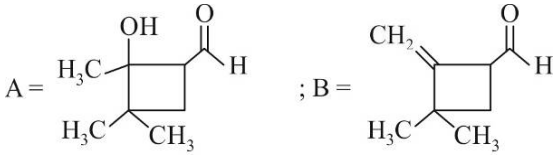

**(D)** 

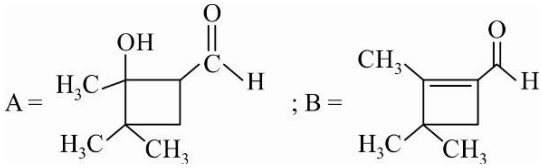

**29.** In the following reactions, products A and B are : **(2019)**



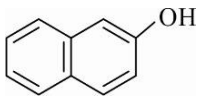

**(A)** 

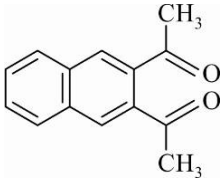

**(B)** 

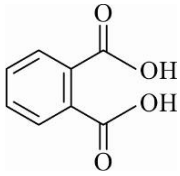

**(C)** 

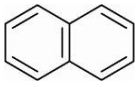

**(D)** 


**30.** Among the following four aromatic compounds, which one will have the lowest melting point ? **(2019)**

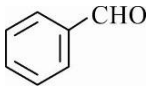
**(A)** 

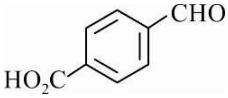

**(B)** 

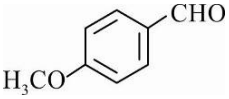

**(C)** 

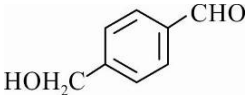

**(D)** 

**31.** The aldehydes which will not form Grignard product with one equivalent Grignard reagents are : **(2019)**

**(A)** 

**(B)** 

**(C)** 

**(D)** 

**(A)** (C), (D) **(B)** (B), (C), (D)

**(C)** (B), (C) **(D)** (B), (D)

**32.** In the following reaction, Aldehyde + Alcohol $\xrightarrow{HCl}$ Acetal **(2019)**

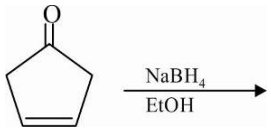
| Aldehyde | Alcohol |
|---|---|
| HCHO | $^{t}$BuOH |
| $CH_3CHO$ | MeOH |

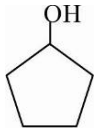
The best combination is:

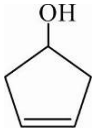
**(A)** HCHO and MeOH **(B)** $CH_3CHO$ and $^{t}$BuOH

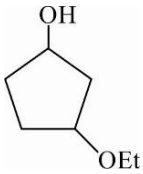
**(C)** HCHO and $^{t}$BuOH **(D)** $CH_3CHO$ and MeOH

**33.** The major product of the following reaction is : **(2019)**



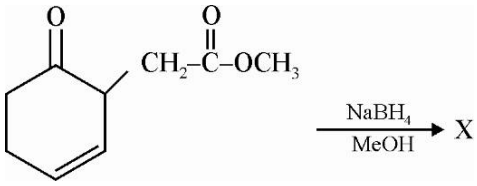
**(A)** 

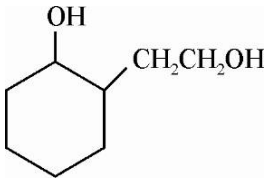
**(B)** 

**(C)** 

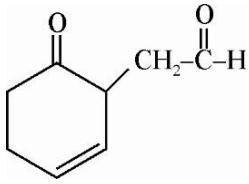
**(D)** 

**34.** The major product 'X' formed in the following reaction is : **(2019)**

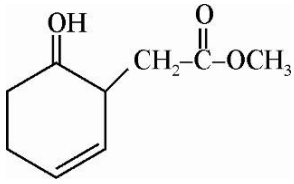




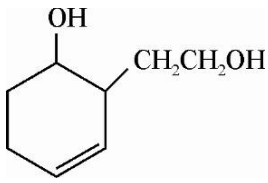
**(A)**



**(B)**

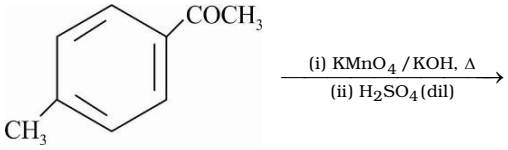


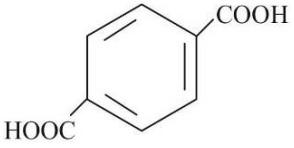
**(C)**

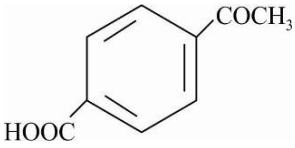


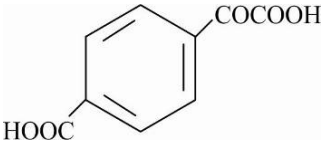
**(D)**

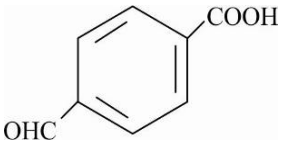
**35.** The major product the following reaction : **(2019)**



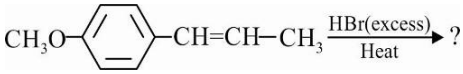

**(A)** 

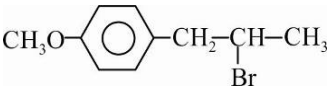

**(B)** 

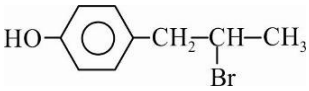

**(C)** 

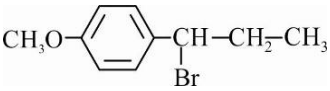

**(D)** 

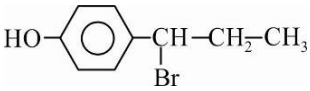

**36.** The major product in the following conversion is : **(2019)**



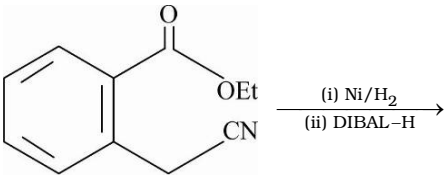

**(A)** 

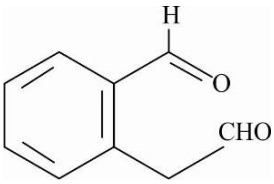

**(B)** 

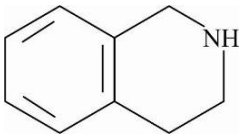

**(C)** 

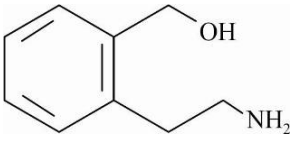

**(D)** 

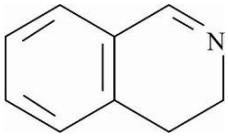

**37.** The major product of the following reaction is : **(2019)**



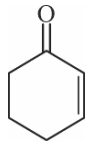
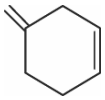
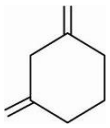
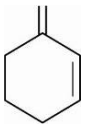

**(A)** 


**(B)** 

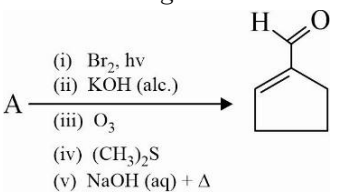

**(C)** 

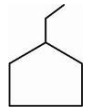
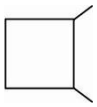

**(D)** 

**38.** An unsaturated hydrocarbon X absorbs two hydrogen molecules on catalytic hydrogenation, and also gives following reaction $X \xrightarrow[Zn/H_2O]{O_3} A \xrightarrow{[Ag(NH_3)_2]^+}$ B(3-oxo-hexanedicarboxylic acid) X will be:

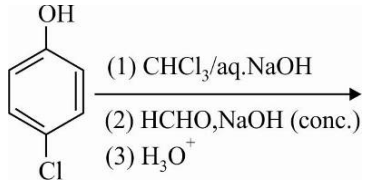
**(A)**  **(B)**  **(C)**  **(D)**  **(2020)**

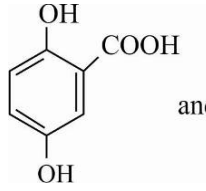
**39.** In the following reaction A is : **(2020)**



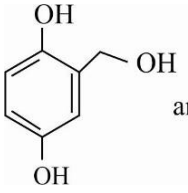

**(A)**  **(B)**  **(C)**  **(D)** 

**40.** The major products of the following reactions are: **(2019)**

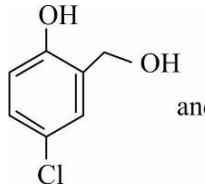



**(A)** 

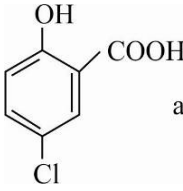
and Methanol

**(B)** 

and Formic acid

**(C)** 

and Formic acid

**(D)** 

and Methanol