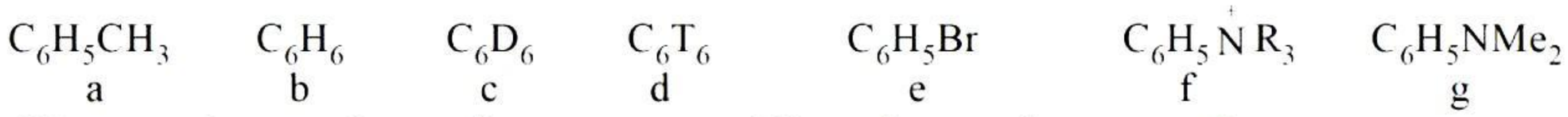
WORK SHEET - 08

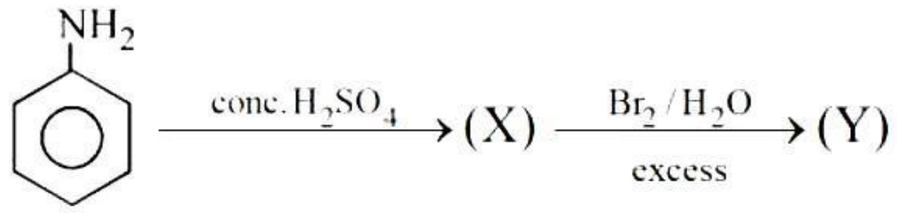
Single Correct

Q.1 What is the correct order of nitration of the following compounds?

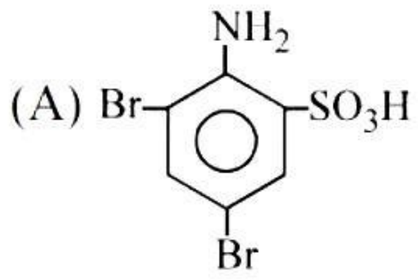


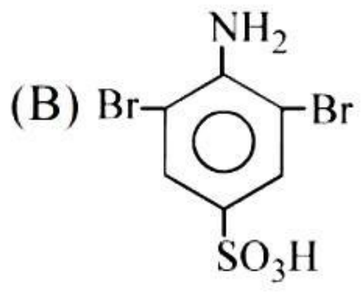
(A) g > a > b > c > d > e > f (B) g > b > c > d > e > a > f

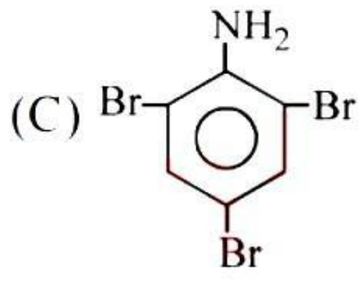
(C) g > a > b = c = d > e > f (D) g > a > b > c = d > e > f

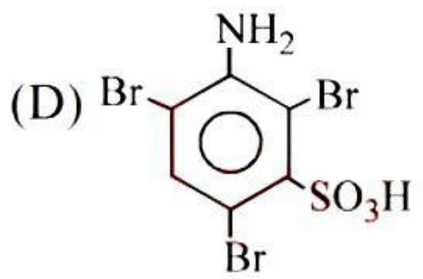
Q.2 

Product (Y) of above reaction is

(A) 

(B) 

(C) 

(D) 

Q.3 Ethyl benzene is treated with the reagent listed, in the order shown.

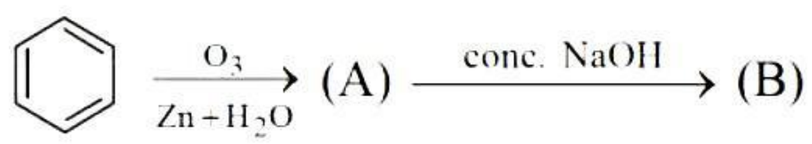
(I) NBS, peroxide, heat (II) $CH_3-CH_2O^{\ominus}$ (III) B_2H_6 (IV) H_2O_2, $HO^{\ominus}$

(A) $Ph-CH_2-CH_2-OH$

(B) $Ph-\underset{\underset{Br}{|}}{CH}-CH_2-OH$

(C) $Ph-\underset{\underset{OH}{|}}{CH}-CH_3$

(D) $Ph-\underset{\underset{OH}{|}}{CH}-CH_2Br$

Q.4 

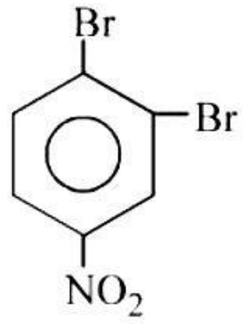
Product (B) is

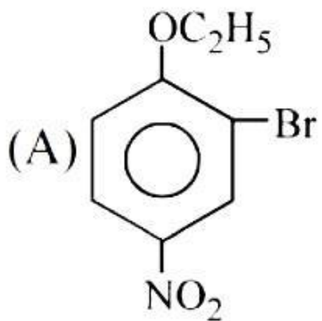
(A) $\begin{array}{l}CH_2-OH\\|\\CH_2-OH\end{array}$

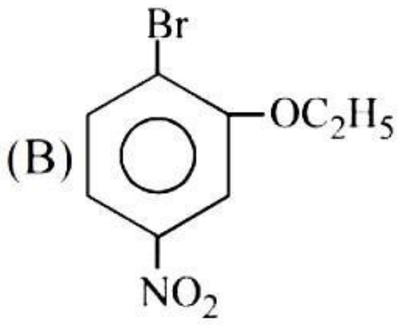
(B) $\begin{array}{l}CO_2^{\ominus}Na^{\oplus}\\|\\CO_2^{\ominus}Na^{\oplus}\end{array}$

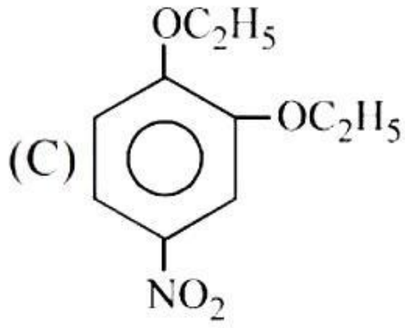
(C) $\begin{array}{l}COOH\\|\\CH_2-O^{\ominus}Na^{\oplus}\end{array}$

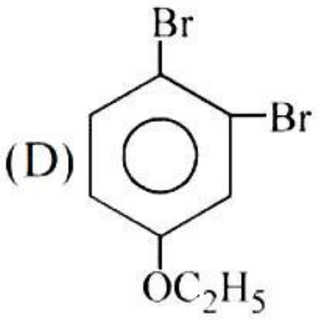
(D) $\begin{array}{l}CO_2^{\ominus}Na^{\oplus}\\|\\CH_2-OH\end{array}$

Q.5 In the given reaction :  $\xrightarrow[C_2H_5OH]{C_2H_5ONa}$ (P), (P) is:

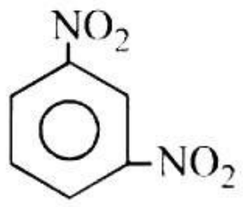
(A) 

(B) 

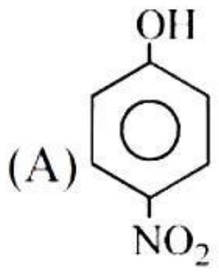
(C) 

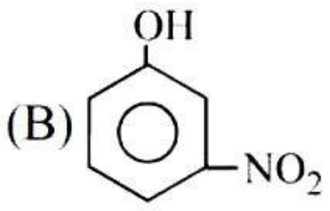
(D) 

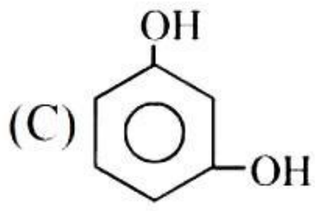
Q.6 The final product of the given reaction sequence

 $\xrightarrow{(NH_4)_2S}$ $\xrightarrow[0-5°C]{NaNO_2/HCl}$ $\xrightarrow[Cu(NO_3)_2]{H_2O,Cu_2O}$

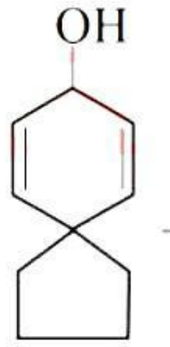
is:

(A) 

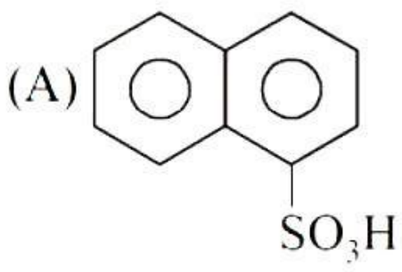
(B) 

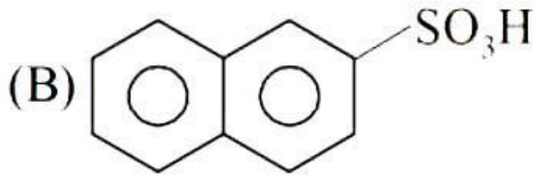
(C) 

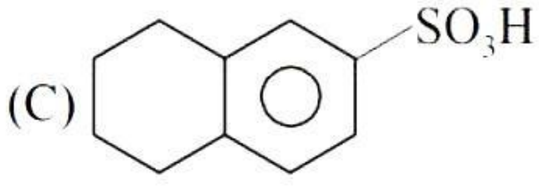
(D) 

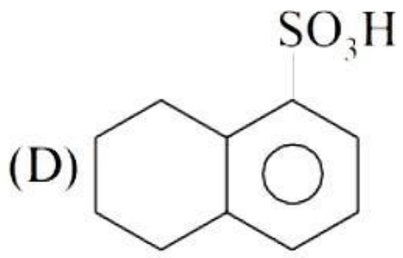
Q.7  $\xrightarrow{H_2SO_4/\Delta}$ $\xrightarrow{Se/\Delta}$ $\xrightarrow[\text{high temperature}]{\text{conc.}H_2SO_4}$

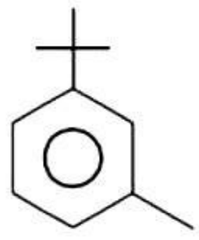
Final product is

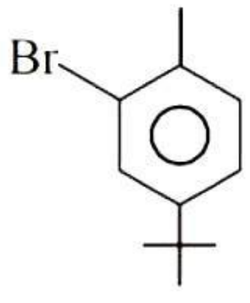
(A) 

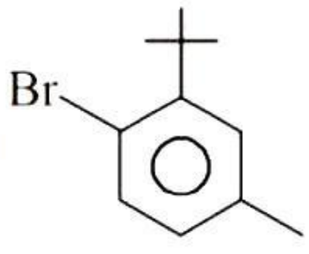
(B) 

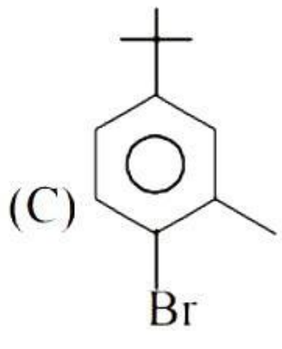
(C) 

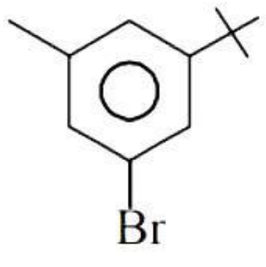
(D) 

Q.8  $\xrightarrow{Br_2/Fe}$ Major product

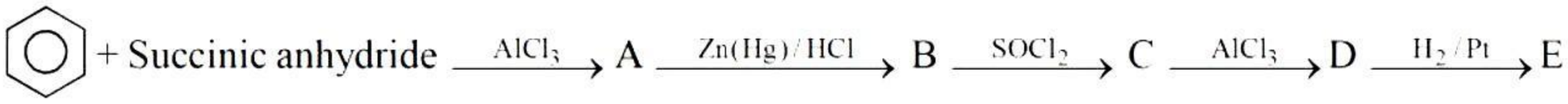
(A) 

(B) 

(C) 

(D) 

Q.9 Identify the final end product in the following reaction sequence



(A) Napthalene (B) Anthracene (C) Decalin (D) Phenanthrene

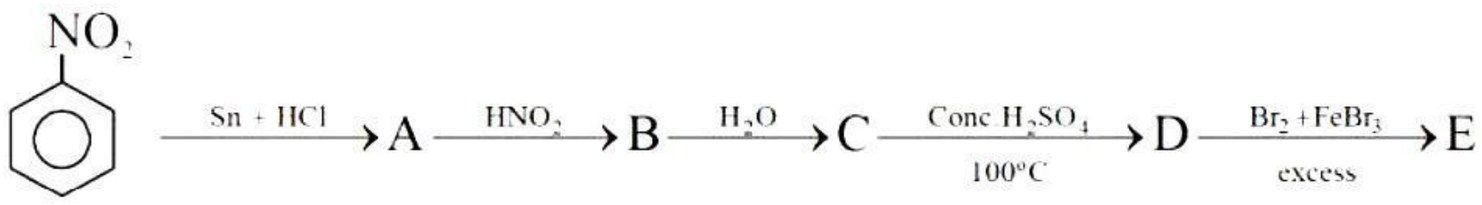
Q.10 Which one is not a good method to get Ph–Ph.

(A) aq. PhCOOK $\xrightarrow{\text{electrolysis}}$ (B) Ph–I $\xrightarrow[\Delta]{Cu}$

(C) Ph–Cl +  $\xrightarrow{AlCl_3}$ (D) Ph–Cl $\xrightarrow[THF]{Na}$

Comprehension :

Examine given sequence of reactions carefully :



Q.11 Conversion of B to C is which type of reaction ?

(A) electrophilic aromatic substitution reaction

(B) nucleophilic aromatic substitution reaction

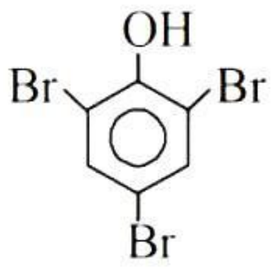
(C) free radical substitution

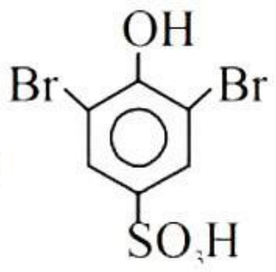
(D) nucleophilic acyl substitution reaction

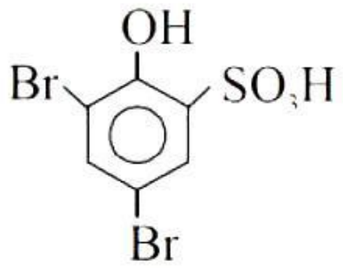
Q.12 Formation of A from nitrobenzene cannot be achieved from :

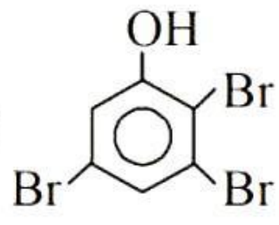
(A) Zn + HCl (B) Fe + HCl (C) $NaBH_4$ (D) $LiAlH_4$

Q.13 Identify product E of the reaction :

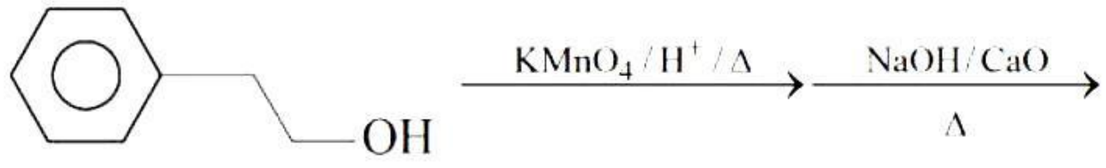
(A) 

(B) 

(C) 

(D) 

More than one correct :

Q.14 

Which statement is correct about final product.

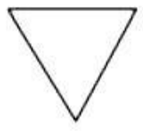
(A) It can not evolve H_2 gas on reaction with Na metal

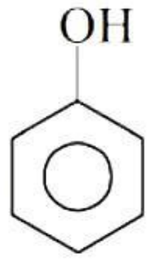
(B) It can be hydrogenated at high temperature and pressure

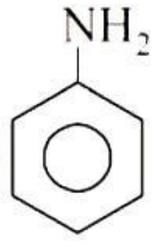
(C) It form an explosive product on trinitration

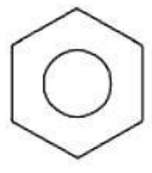
(D) It form para bromo toluene as major product on bromination by Br_2/Fe.

Q.15 Which of the following can decolourise brown colour of bromine water?

(A) 

(B) 

(C) 

(D) 

Q.16  $\xrightarrow[\text{High pressure}]{Cl_2/h\nu}$ P

Name of P is/are

(A) Gamaxane (B) HCB (C) BHC (D) Lindane

Q.17 **A** $\xrightarrow[2.H^{\oplus}/\ H_2O]{1.\ HCN/HCl/AlCl_3}$ $\xrightarrow{\overset{\ominus}{OH}/H_2O}$ $\begin{matrix} Ph–COO^- \\ + \\ Ph–CH_2–OH \end{matrix}$

'A' can be prepared by :

(A) $Ph–H \xrightarrow{CO/\ HCl/\ AlCl_3}$

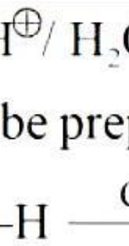
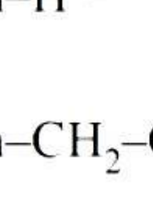
(B) $Ph–CH_3 \xrightarrow{\text{Etard reaction}}$

(C) $Ph–CH_2–OH \xrightarrow{PCC}$

(D) $Ph-CH(Cl)(Cl) \xrightarrow{\text{aq KOH}}$

Mathch the column

Q.18

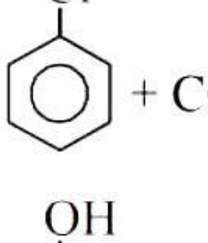
	(Reaction)		***(Major product)***
(P)	 $\xrightarrow{KMnO_4}$	(A)	DDT
(Q)	 $+ CCl_3 – CHO \xrightarrow{H^+}$	(B)	Benzoic acid
(R)	 + Pthallic anhydride $\xrightarrow{H^+}$	(C)	Butter yellow
(S)	$Ph–NMe_2 + Ph – N_2^+Cl^- \longrightarrow$	(D)	Phenolpthalene

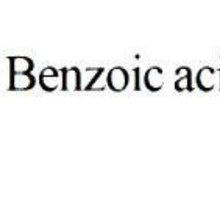
Subjective :

Q.19 Consider following reactions-

(I)  $\xrightarrow{KCN}$

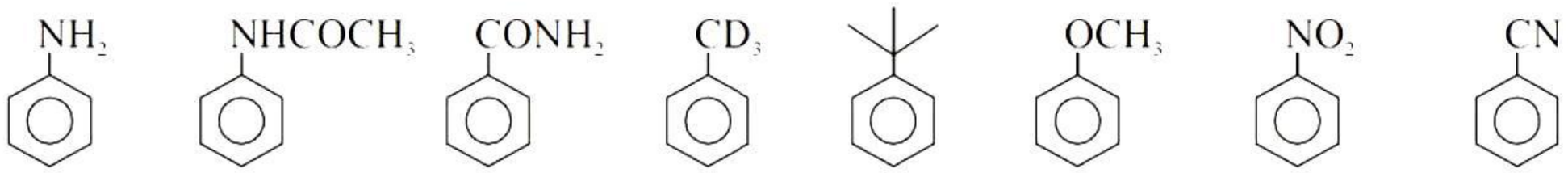
(II)  $\xrightarrow{Br_2/\ OH^-}$

(III)  $\xrightarrow{CuCN/\ HCN}$

(IV)  $\xrightarrow{PCl_5}$

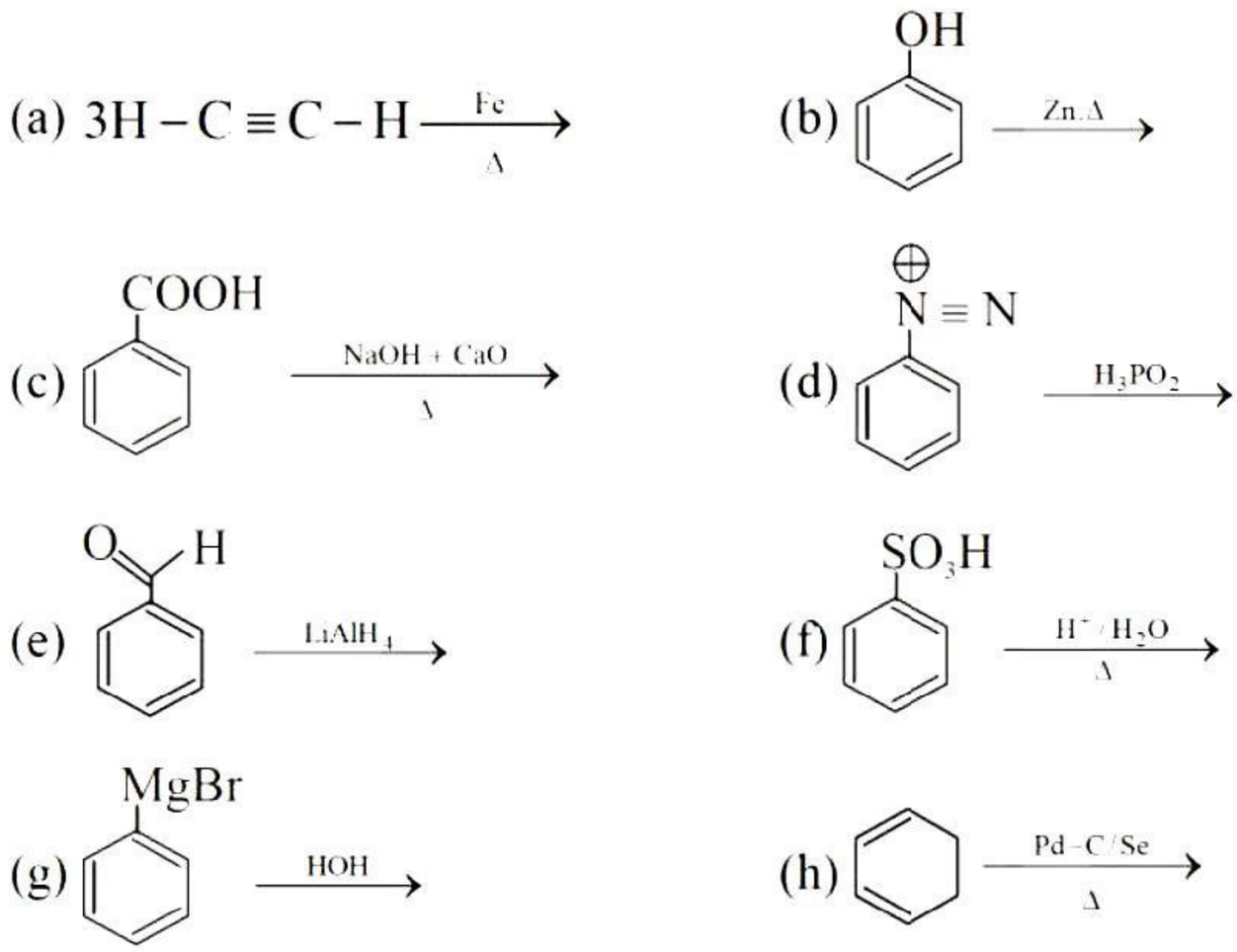
No. of reactions which can produce Ph–CN in above reactions are

Q.20 Consider following compounds

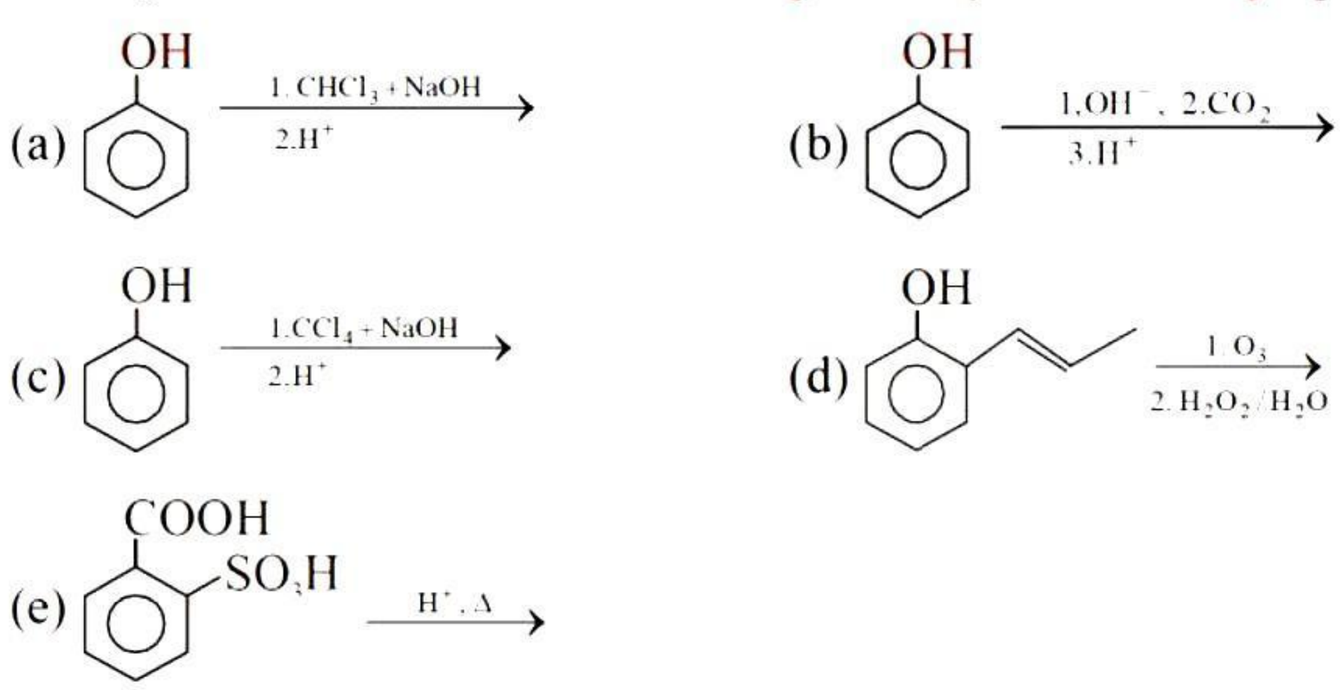


No. of compounds which are more reactive than Ph–CH_3 for bromination are .....

Q.21 Identify number of reactions that can give benzene as major product



Q.22 Identify number of reactions that would give salicylic acid as major product.



ANSWER KEY

Q.1	C	Q.2	C	Q.3	A	Q.4	D	Q.5	A
Q.6	B	Q.7	B	Q.8	C	Q.9	A	Q.10	C
Q.11	B	Q.12	C	Q.13	A	Q.14	ABC	Q.15	ABC
Q.16	ACD	Q.17	ABCD	Q.18	[(P) B, (Q) A (R) D (S) C]			Q.19	[2]
Q.20	[3]	Q.21	[5]	Q.22	[3]				

WORK SHEET - 08

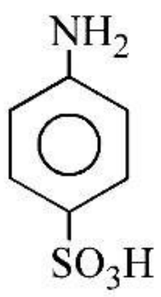
HINTS & SOLUTION

Q.1 (C)

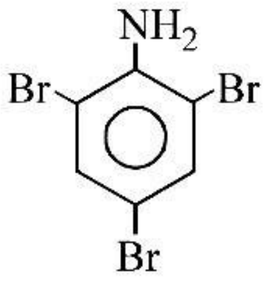
r.d.s of nitration does not involve (C–H) bond clevage

$\therefore$ $C_6H_6 = C_6D_6 = C_6T_6$

Q.2 (C)

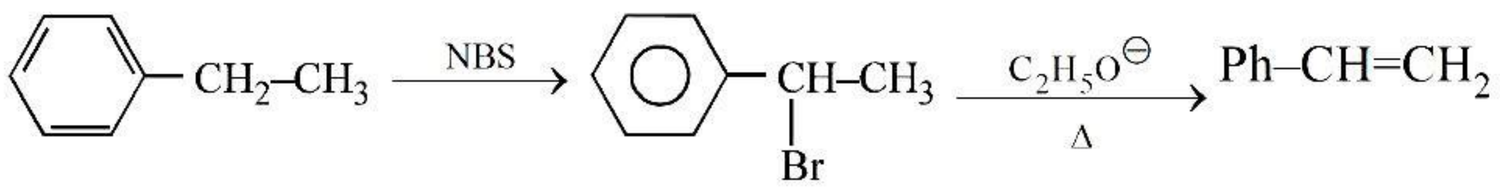


(X)

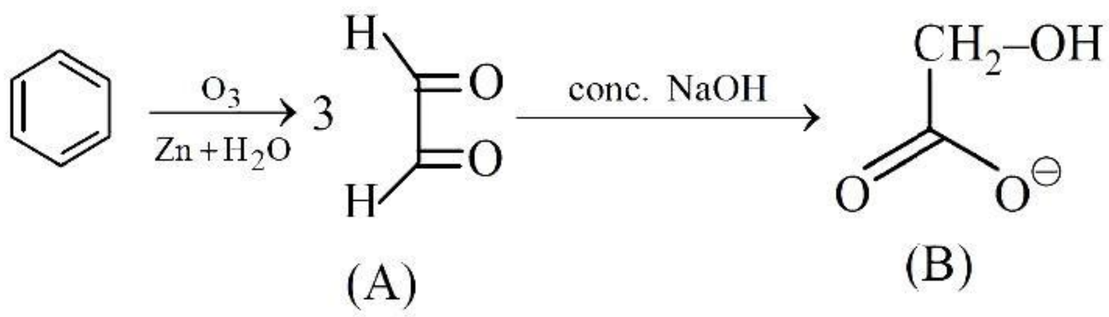


(Y)

Q.3 (A)



Q.4 (D)

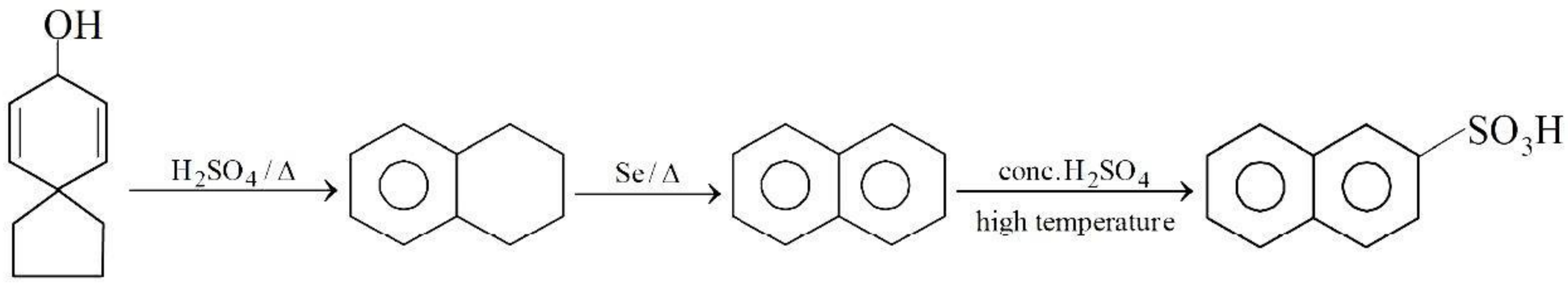


(A) (B)

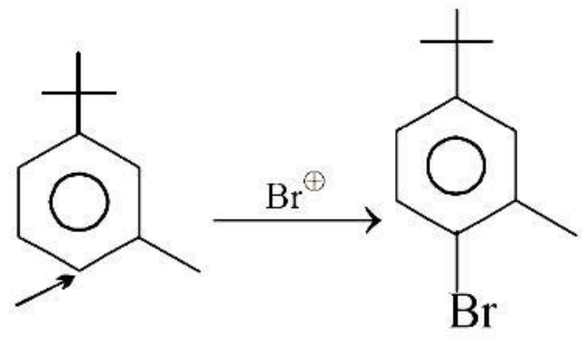
Q.5 (A)

Q.6 (B)

Q.7 (B)



Q.8 (C)

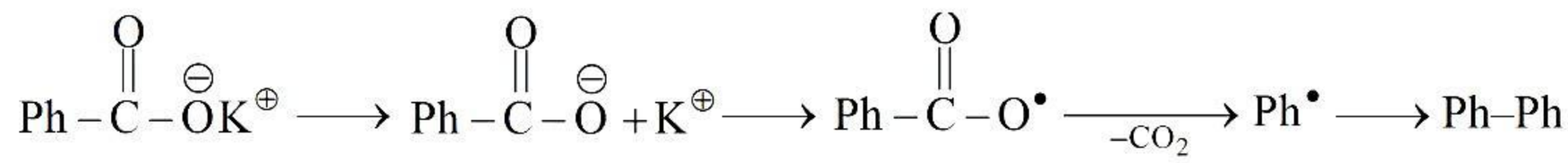


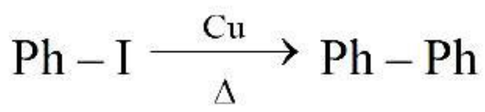
Due to activated this position by 3 hypoconjugative structures.

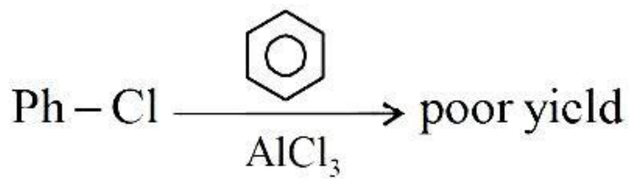
Major

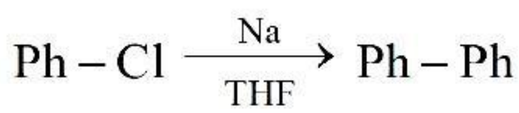
Q.9 (A)

Q.10 (C)









Q.11 (B)

Q.12 (C)

Q.13 (A)

Q.14 (A) (B) (C)

Q.15 (A) (B) (C)

Q.16 (A) (C) (D)

Q.17 (A) (B) (C) (D)

Q.18 (P) B, (Q) A (R) D (S) C]

Q.19 2

Q.20 3

Q.21 5

Q.22 3