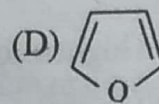
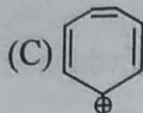
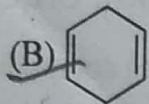
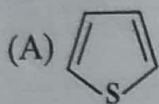


Q.1 Which of the following is not an aromatic compound :



Q.2 Which of the following group is divalent :

(A) Benzoyl

(B) Benzyl

(C) Benzal

(D) p-Tolyl

Q.3 Benzene is a resonance hybrid mainly of two Kekule structures. Hence :

(A) Half of the molecules correspond to one structure, and half of the second structure

(B) At low temperatures benzene can be separated into two structures

(C) Two structures make equal contribution to resonance hybrid

(D) An individual benzene molecule changes back and forth between two structures

Q.4 How many π electron are there in the following species :



(A) 2

(B) 4

(C) 6

(D) 8

Q.5 The number of benzylic hydrogen atoms in ethylbenzene is :

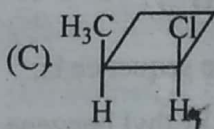
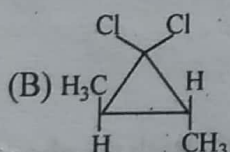
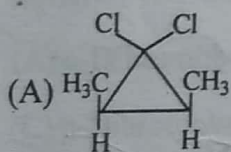
(A) 3

(B) 5

(C) 2

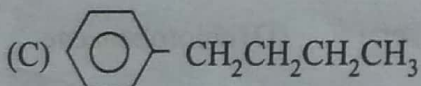
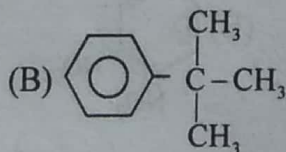
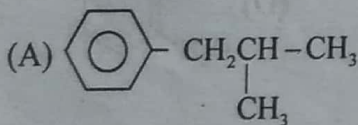
(D) 7

Q.6 Trans-Butene-2 $\xrightarrow[\text{Solvent}]{\text{CHCl}_3 / \text{KOH}}$ Product



(D) Both (A) & (B)

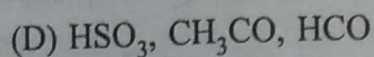
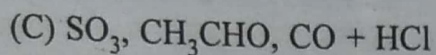
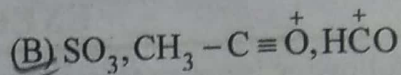
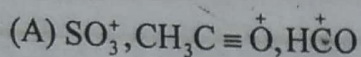
Q.7 + $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{Cl} \xrightarrow{\text{AlCl}_3}$ hydrocarbon (X) major product X is:



(D) None is correct

SBG STUDY

Q.8 In the sulphonation, acetylation and formylation of benzene the group of effective electrophiles would be:



Q.9 o/p ratio in highest for nitration of which of the following compound?

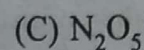
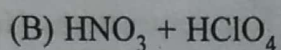
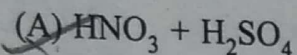
(A) Ethyl benzene

(B) Toluene

(C) Isopropyl benzene

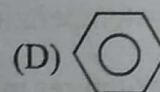
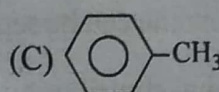
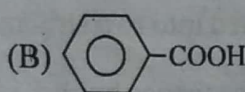
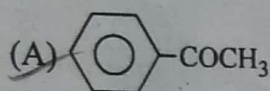
(D) Tertiarybutyl benzene

Q.10 Which can be used to generate NO_2^+ in nitration of benzene ring

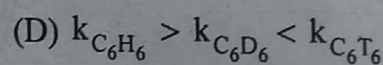
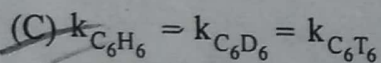
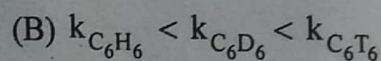
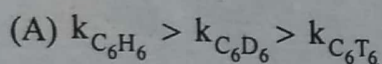


(D) All

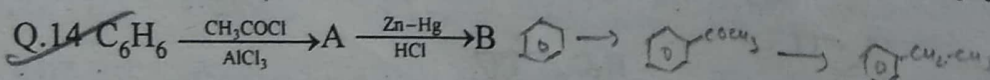
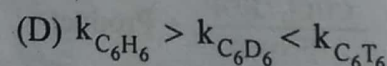
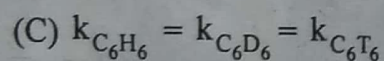
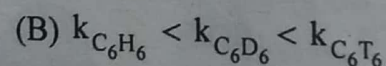
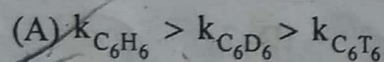
Q.11 Product obtained when benzoyl acetic acid is heated with soda-lime is:



Q.12 For the electrophilic substitution reaction involving nitration, which of the following sequence regarding the rate of reaction is true?



Q.13 For the electrophilic substitution reaction involving sulphonation, which of the following sequence regarding the rate of reaction is true?



The end product in the above sequence is:

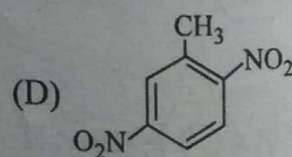
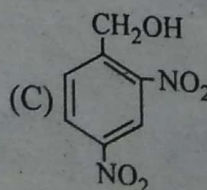
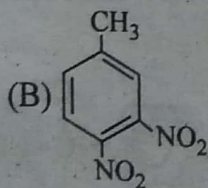
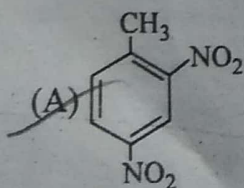
(A) Toluene

(B) Ethyl benzene

(C) Both the above

(D) None

Q.15 p-Nitrotoluene on further nitration gives:



Q.16 Reaction of SO_3 is easier in:

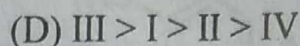
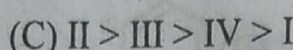
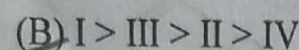
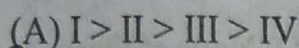
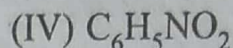
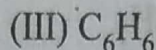
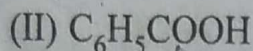
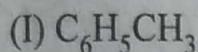
(A) Benzene

(B) Toluene

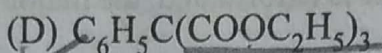
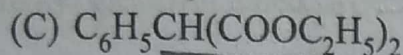
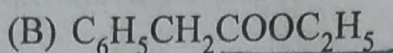
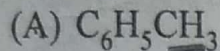
(C) Nitrobenzene

(D) chlorobenzene

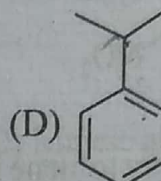
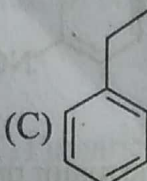
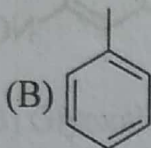
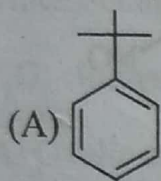
Q.17 Which order is correct for the decreasing reactivity to ring monobromination of the following compounds :



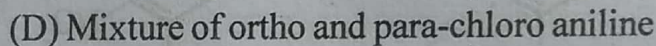
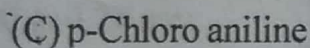
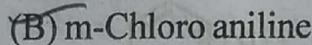
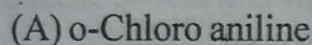
Q.18 The highest yield of m-product is possible by the electrophilic substitution of the following:



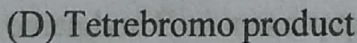
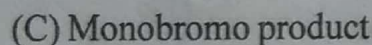
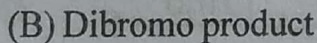
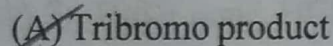
Q.19 Which of the following will undergo sulphonation at fastest rate ?



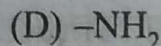
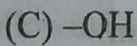
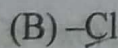
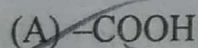
Q.20 Aniline under acidic medium, when chlorinated, produces:



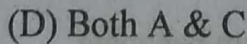
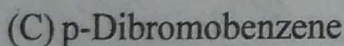
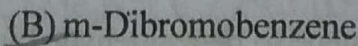
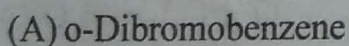
Q.21 When sulphonilic acid ($p-H_2NC_6H_4SO_3H$) is treated with excess of bromine water, the product is:



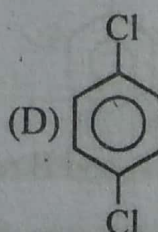
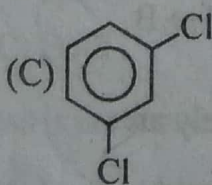
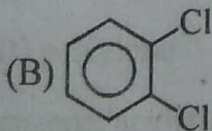
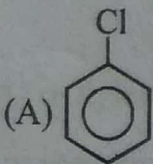
Q.22 In a reaction of C_6H_5Y , the major product (>60%) is m-isomer, so the group Y is:



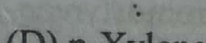
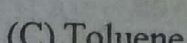
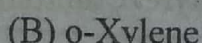
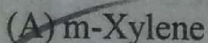
Q.23 An aromatic compound of molecular formula $C_6H_4Br_2$ was nitrated then three isomers of formula $C_6H_3Br_2NO_2$ were obtained. The original compound is:



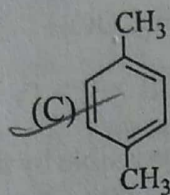
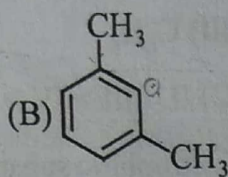
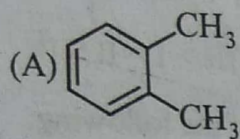
Q.24 Which of the following substituted benzene derivatives would furnish only three isomers in significant amount when one more substituent is introduced:



Q.25 Which of the following is most reactive towards sulphonation?

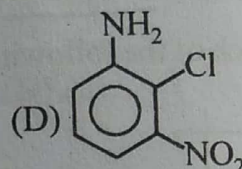
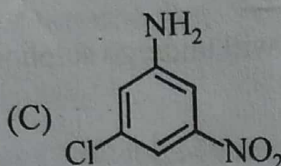
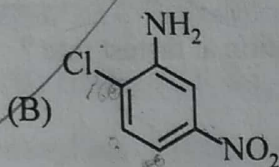
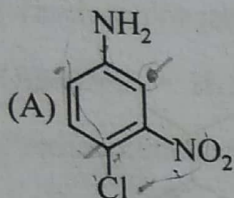


Q.26 Ring nitration of dimethyl benzene results in the formation of only one nitro dimethyl benzene. The dimethyl benzene is:

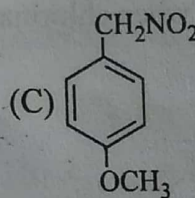
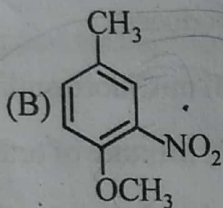
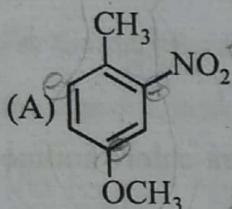


(D) None of these

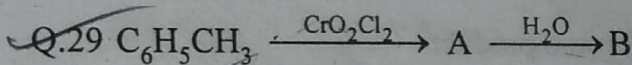
Q.27 If meta-nitroaniline is chlorinated, the major product is:



Q.28 If p-methoxytoluene is nitrated, the major product is:



(D) No reaction

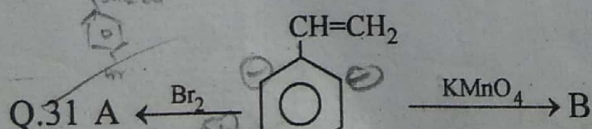


The functional group present in B and name of the reaction would be

- (A) -CHO, Gattermann aldehyde synthesis (B) -CHO, Etard reaction
 (C) -COCH₃, Friedel Crafts reaction (D) -CHO, Oxo reaction

Q.30 Etard reaction in the following is:

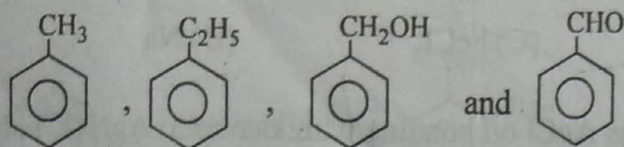
- (A) Oxidation of toluene to benzaldehyde by chromylchloride
 (B) Oxidation of toluene to benzaldehyde by alkaline KMnO₄
 (C) Dry distillation of calcium benzoate
 (D) Reaction of benzene with Cl₂ in the presence of UV light



Compound A and B respectively are:

- (A) o-Bromostyrene, benzoic acid (B) p-Bromostyrene, benzaldehyde
 (C) m-Bromostyrene, benzaldehyde (D) Styrene dibromide, benzoic acid

Q.32 If the mixture of the following four aromatic compounds on oxidation by strong oxidising agent gives



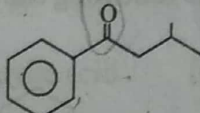
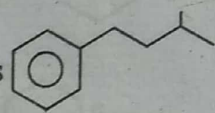
- (A) Mixture of $C_6H_5CH_2OH + C_6H_5COOH$ (B) Mixture of $C_6H_5CHO + C_6H_5COOH$
 (C) Only C_6H_5COOH (D) None of the above

Q.33 Methyl group attached to benzene can be oxidised to carboxyl group by reacting with:

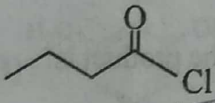
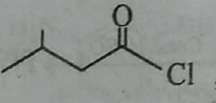
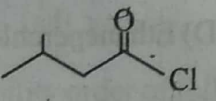
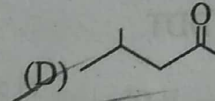
- (A) Fe_2O_3 (B) $AgNO_3$ (C) $KMnO_4$ (D) CrO_3

Q.34 Which of the following is/are produced when a mixture of benzene vapour and oxygen is passed over V_2O_5 catalyst at 775 K ?

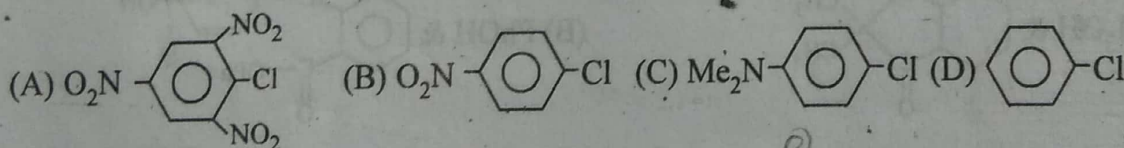
- (A) Oxalic acid (B) Glyoxal (C) Fumaric acid (D) Maleic anhydride

Q.35 Benzene on reaction with 'A' forms  which on reaction with 'B' forms 

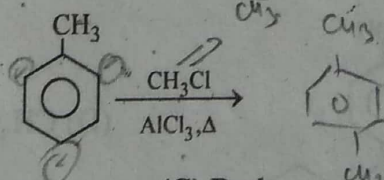
'A' and 'B' are:

- (A) $Zn(Hg) + conc. HCl$,  (B)  , $LiAlH_4$
 (C)  , $NaBH_4$ (D)  , $Zn(Hg) + conc. HCl$

Q.36 Which chloroderivative of benzene among the following would undergo-hydrolysis most readily with aq. NaOH to furnish the corresponding hydroxy derivative.



Q.37 Major product of this reaction will be :



- (A) o-Xylene (B) p-Xylene (C) Both (D) m-Xylene

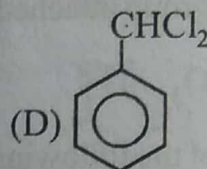
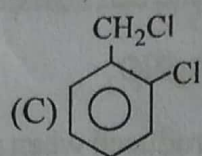
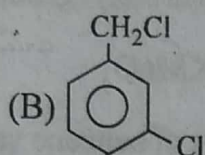
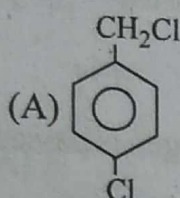
Q.38 For preparing monoalkyl benzene, acylation process is preferred than direct alkylation because

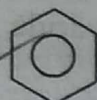
- (A) In alkylation, a poisonous gas is evolved (B) In alkylation, large amount of heat is evolved
 (C) In alkylation, polyalkylated product is formed (D) Alkylation is very costly

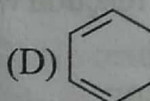
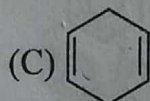
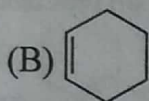
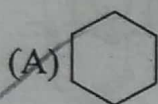
Q.39 Phenol and ethanol are distinguished by the reaction with

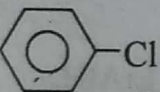
- (A) Red litmus (B) NaHCO_3 (C) FeCl_3 (D) Na

Q.40 An aromatic compound 'A' $\text{C}_7\text{H}_6\text{Cl}_2$, gives AgCl on bonding with alcoholic AgNO_3 solution, and yields $\text{C}_7\text{H}_7\text{OCl}$ on treatment with sodium hydroxide. 'A' on oxidation gives a mono chlorobenzene acid which affords only one mononitro derivative. The compound A is:



Q.41  + $\text{H}_2 \xrightarrow[\text{High pressure}]{\text{Ni, high temp.}}$ (A). Which of the following can be isolated as the product of this reaction?



Q.42 Chloral +  $\xrightarrow{\text{Conc. H}_2\text{SO}_4}$ product. The product is:

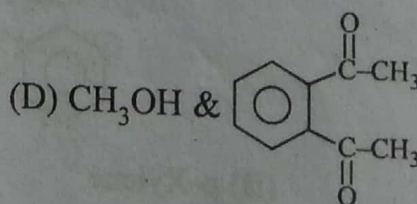
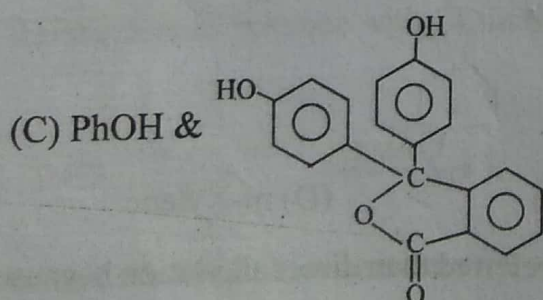
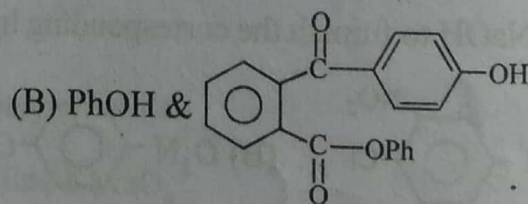
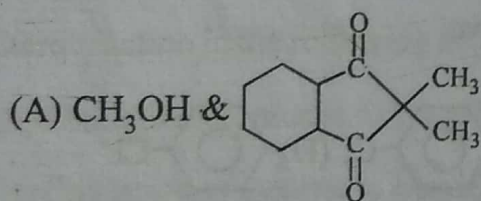
(A) Lindane

(B) DDT

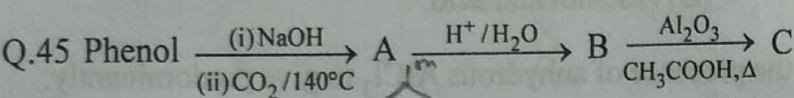
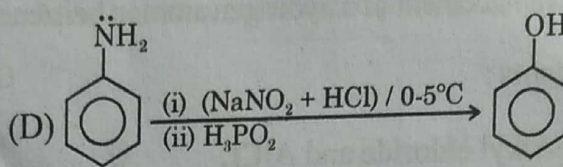
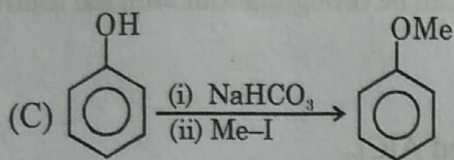
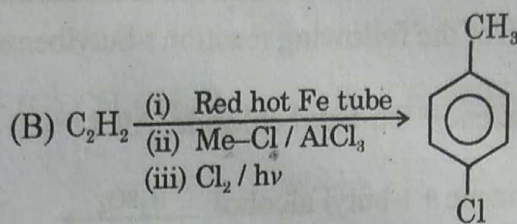
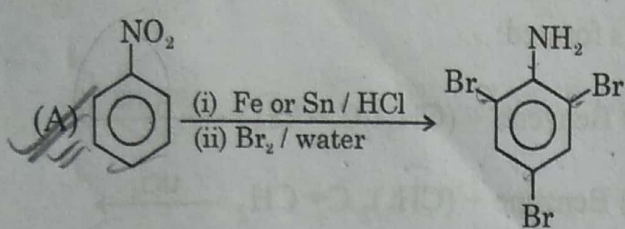
(C) Teflon

(D) Ethanepchlorate

Q.43 Acetophenone $\xrightarrow{\text{HCO}_3\text{H}}$ A $\xrightarrow{\text{H}_3\text{O}^+}$ B + C $\xrightarrow[\text{H}^+]{\text{Phthalic Anhydride}}$ Indicator (D) ; C & D are



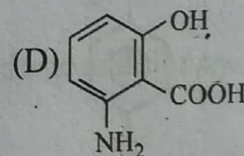
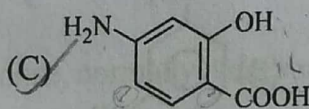
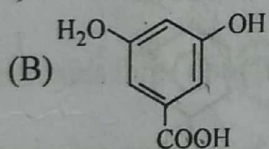
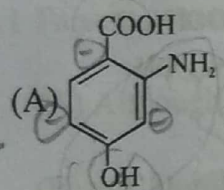
Q.44 Select the reaction giving correct major product :



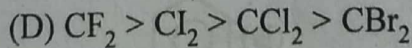
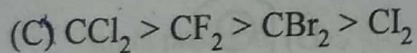
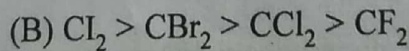
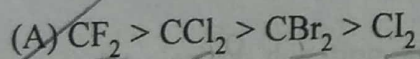
In this reaction, the end product C is:

- (A) Salicylaldehyde (B) Salicylic acid (C) Phenyl acetate (D) Aspirin

Q.46 m-Aminophenol on treatment with NaOH and CO₂ gives which of the following as major product?



Q.47 Stability order of following singlet halocarbene is



13