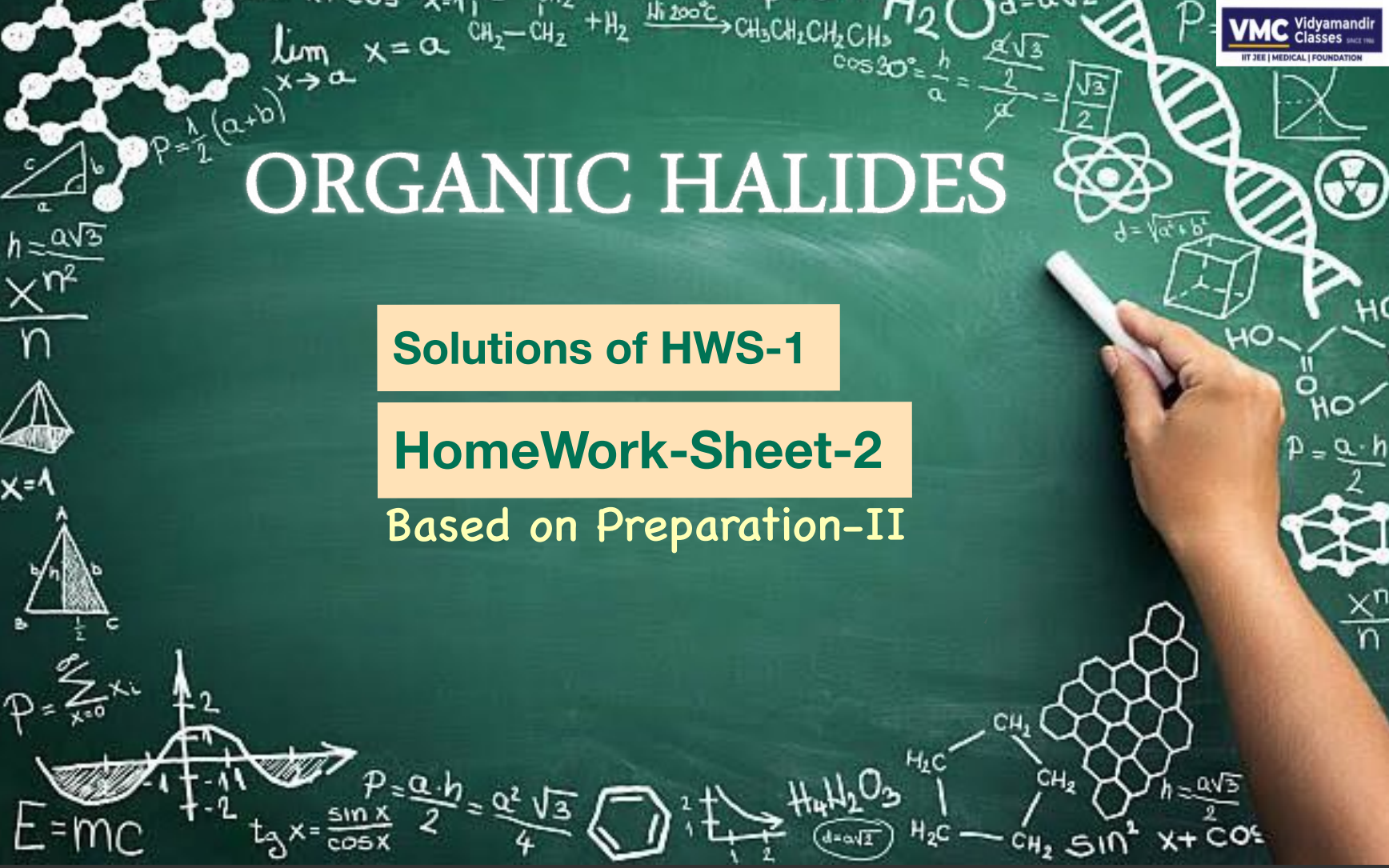
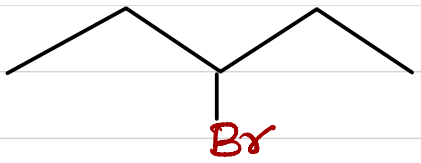

VMC Vidyamandir Classes
IIT JEE | MEDICAL | FOUNDATION
ORGANIC HALIDES
Solutions of HWS-1
HomeWork-Sheet-2
Based on Preparation-II

NCERT BOOK QUESTIONS TO BE ATTEMPTED AT HOME

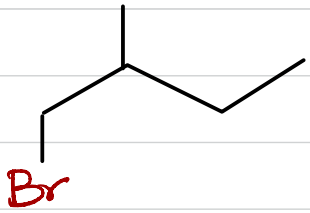
1. Draw the structures of all the eight structural isomers that have the molecular formula $C_5H_{11}Br$. Name each isomer according to IUPAC system and classify them as primary, secondary or tertiary bromide.

(1°): 1-Bromopentane

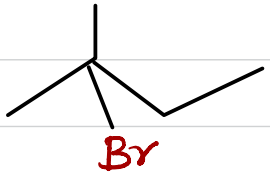
(2°): 2-Bromopentane



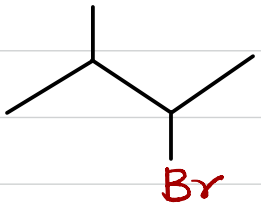
(2°): 3-Bromopentane



(1°): 1-Bromo-2-methyl butane



(3°): 2-Bromo-2-methyl butane

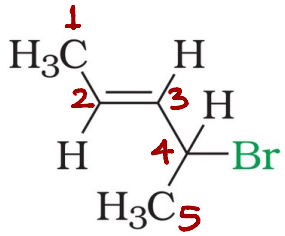


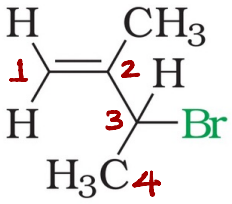
(2°): 2-Bromo 3-methyl butane

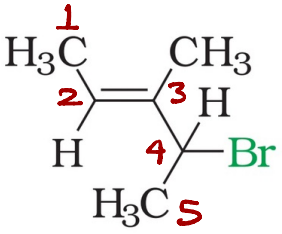
(1°): 1-Bromo 3-methyl butane

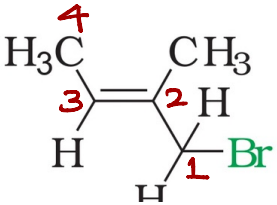
(1°): 1-Bromo-2,2-dimethyl propane (Neopentyl)

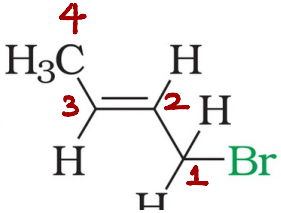
2. Write IUPAC names of the following:

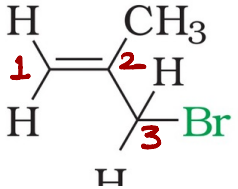
(i) 

(ii) 

(iii) 

(iv) 

(v) 

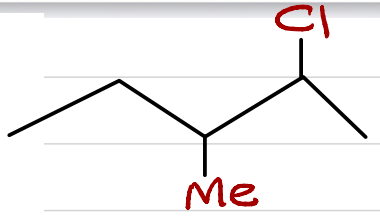
(vi) 

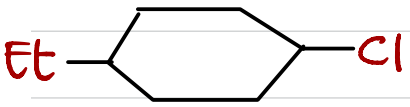
(i) 4-Bromopent-2-ene
(ii) 3-Bromo-2-methylbut-1-ene
(iii) 4-Bromo-3-methylpent-2-ene
(iv) 1-Bromo-2-methylbut-2-ene
(v) 1-Bromobut-2-ene
(vi) 3-Bromo-2-methylpropene

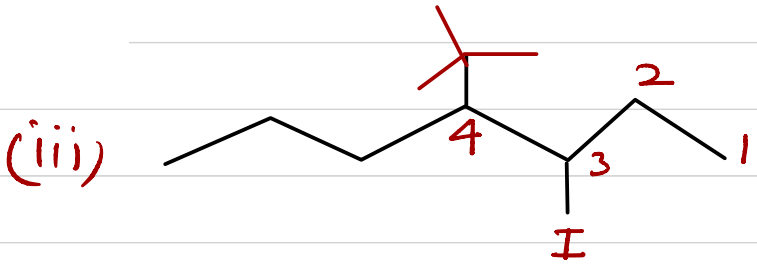
---

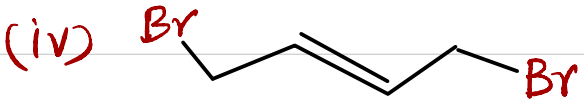
3. Write structures of the following compounds:

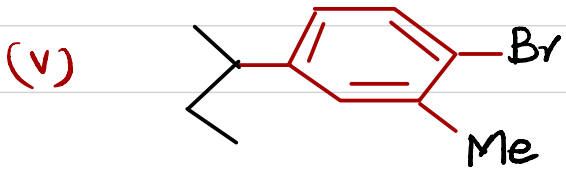
(i) 2-Chloro-3-methylpentane
(ii) 1-Chloro-4-ethylcyclohexane
(iii) 4-tert. Butyl-3-iodoheptane
(iv) 1,4-Dibromobut-2-ene
(v) 1-Bromo-4-sec. butyl-2-methylbenzene.

(i) 

(ii) 

(iii) 

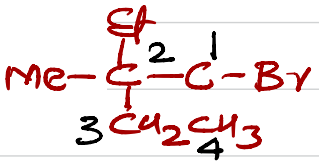
(iv) 

(v) 

4. (i) $(CH_3)_2CHCH(Cl)CH_3$ (ii) $CH_3CH_2CH(CH_3)CH(C_2H_5)Cl$

(iii) $CH_3CH_2C(CH_3)_2CH_2I$ (iv) $(CH_3)_3CCH_2CH(Br)C_6H_5$

(v) $CH_3CH(CH_3)CH(Br)CH_3$ (vi) $CH_3C(C_2H_5)_2CH_2Br$



(i) 2°: 2-Chloro-3-methyl butane (ii) 2°: 3-Chloro-4-methyl hexane

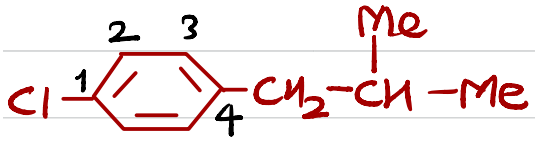
(iii) 1°: 1-Iodo-2,2-dimethyl butane (iv) 2° benzylic: 1-Bromo-3,3-dimethyl 1-phenyl butane

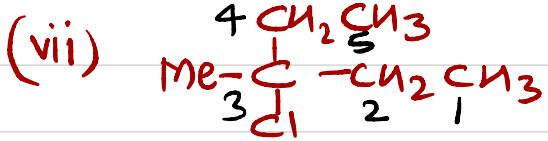
(v) 2°: 2-Bromo-3-methyl butane (vi) 1°: 1-Bromo-2-ethyl-2-methyl butane

(vii) $CH_3C(Cl)(C_2H_5)CH_2CH_3$ (viii) $CH_3CH=C(Cl)CH_2CH(CH_3)_2$

(ix) $CH_3CH=CHC(Br)(CH_3)_2$ (x) p-$ClC_6H_4CH_2CH(CH_3)_2$

(xi) m-$ClCH_2C_6H_4CH_2C(CH_3)_3$ (xii) o-Br-$C_6H_4CH(CH_3)CH_2CH_3$



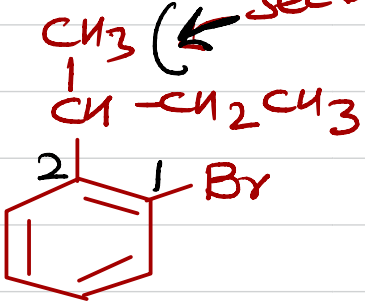
(vii)  : 3-chloro-3-methyl pentane (3°)

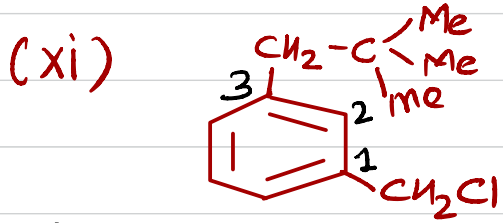
(viii) 2° Vinylic: 3-Chloro-5-methyl hex-3-ene

(ix) 2° Allylic: 4-Bromo-4-methyl pent-2-ene

(x) Arylic: 1-chloro-4-(2-methyl propyl) benzene (↑ isobutyl)

(sec butyl)



(xi) 

(xii) Arylic: 1-Bromo 2-(1-methyl propyl) benzene

(Benzylic): 1-Chloromethyl-3-(2,2-dimethyl propyl) benzene (↑ neopentyl)

5. (i) $CH_3\overset{4}{C}H(Cl)\overset{2}{C}H(Br)\overset{1}{C}H_3$ (ii) $\overset{2}{C}HF_2\overset{1}{C}BrClF$ (iii) $ClCH_2\overset{4}{C}\equiv\overset{3}{C}\overset{2}{C}\overset{1}{C}H_2Br$ → Mistake in typing *

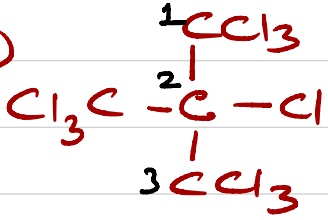
(iv) $(CCl_3)_3CCl$ (v) $CH_3C(p\text{-}ClC_6H_4)_2CH(Br)CH_3$ (vi) $(CH_3)_3CCH{=}ClC_6H_4I\text{-}p$

(i) 2-Bromo-3-chlorobutane.

(ii) 1-Bromo-1-chloro-1,1,2-trifluoroethane

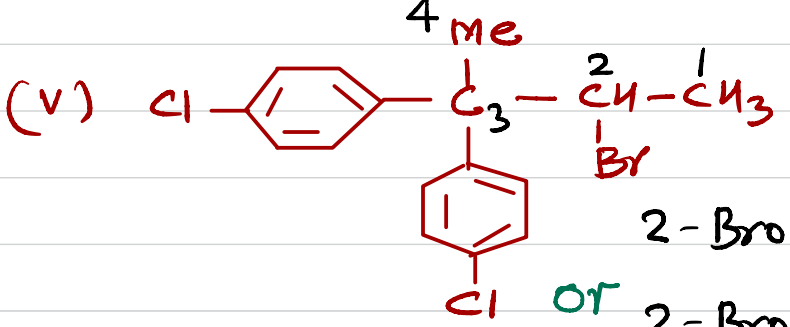
(iii) 1-Bromo-4-chlorobut-2-yne

(iv)



2-(Trichloromethyl)-1,1,1,2,3,3,3-heptachloropropane

(v)

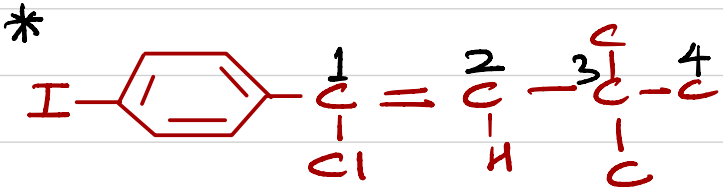


2-Bromo-3,3-di(4-chlorophenyl)butane

or

2-Bromo-3,3-bis(4-chlorophenyl)butane

(vi) *

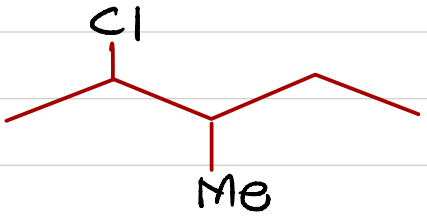


: 1-Chloro-1-(4-iodophenyl)-3,3-dimethylbutane

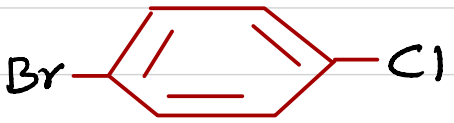
6. (i) 2-Chloro-3-methylpentane (ii) *p*-Bromochlorobenzene

(iii) 1-Chloro-4-ethylcyclohexane (iv) 2-(2-Chlorophenyl)-1-iodooctane

(i)

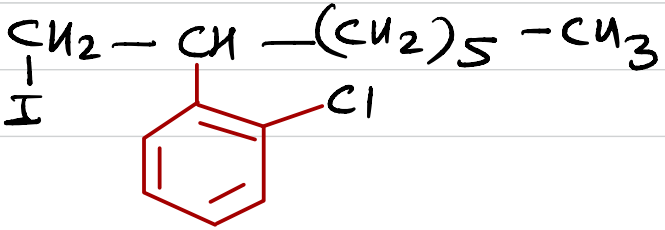


(ii)



(iii)

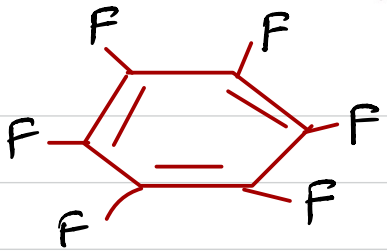
(iv)



(v) Perfluorobenzene (vi) 4-tert-Butyl-3-iodoheptane

(vii) 1-Bromo-4-sec-butyl-2-methylbenzene (viii) 1,4-Dibromobut-2-ene

(v)



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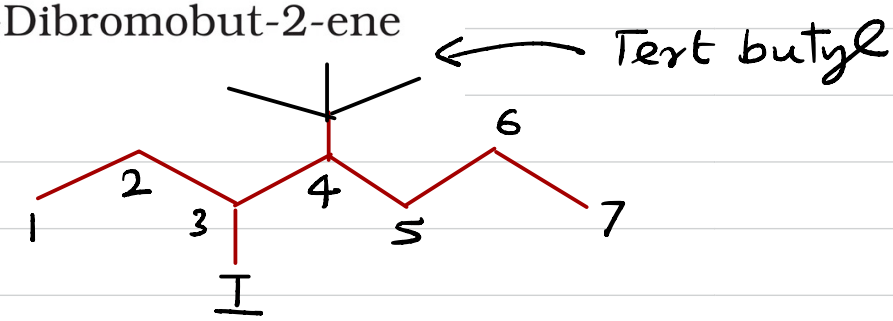

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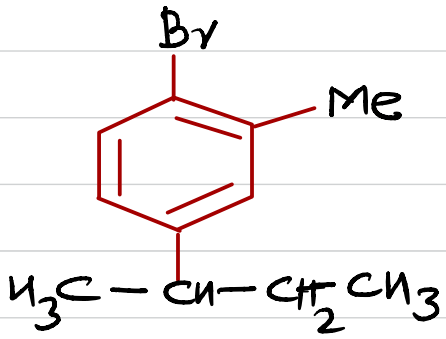
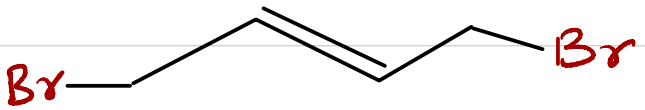
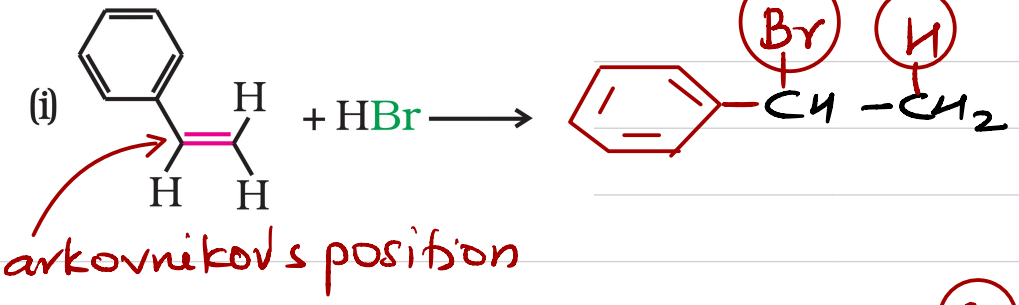


(viii)



7. Write the products:

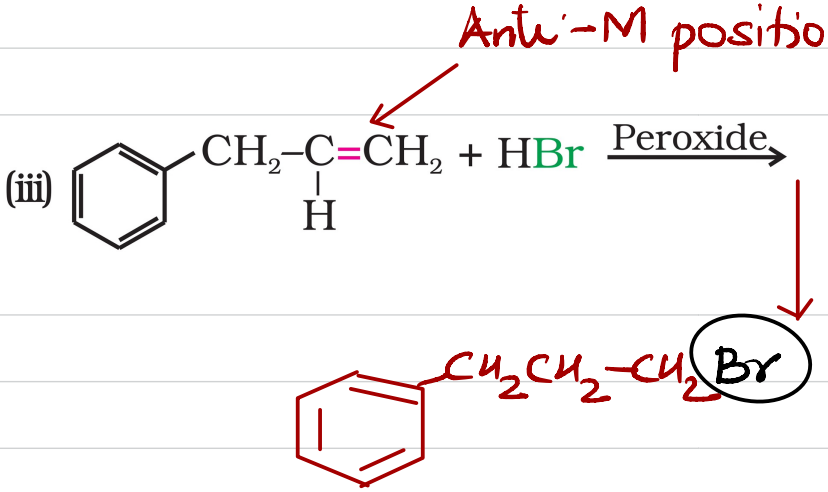
(i)



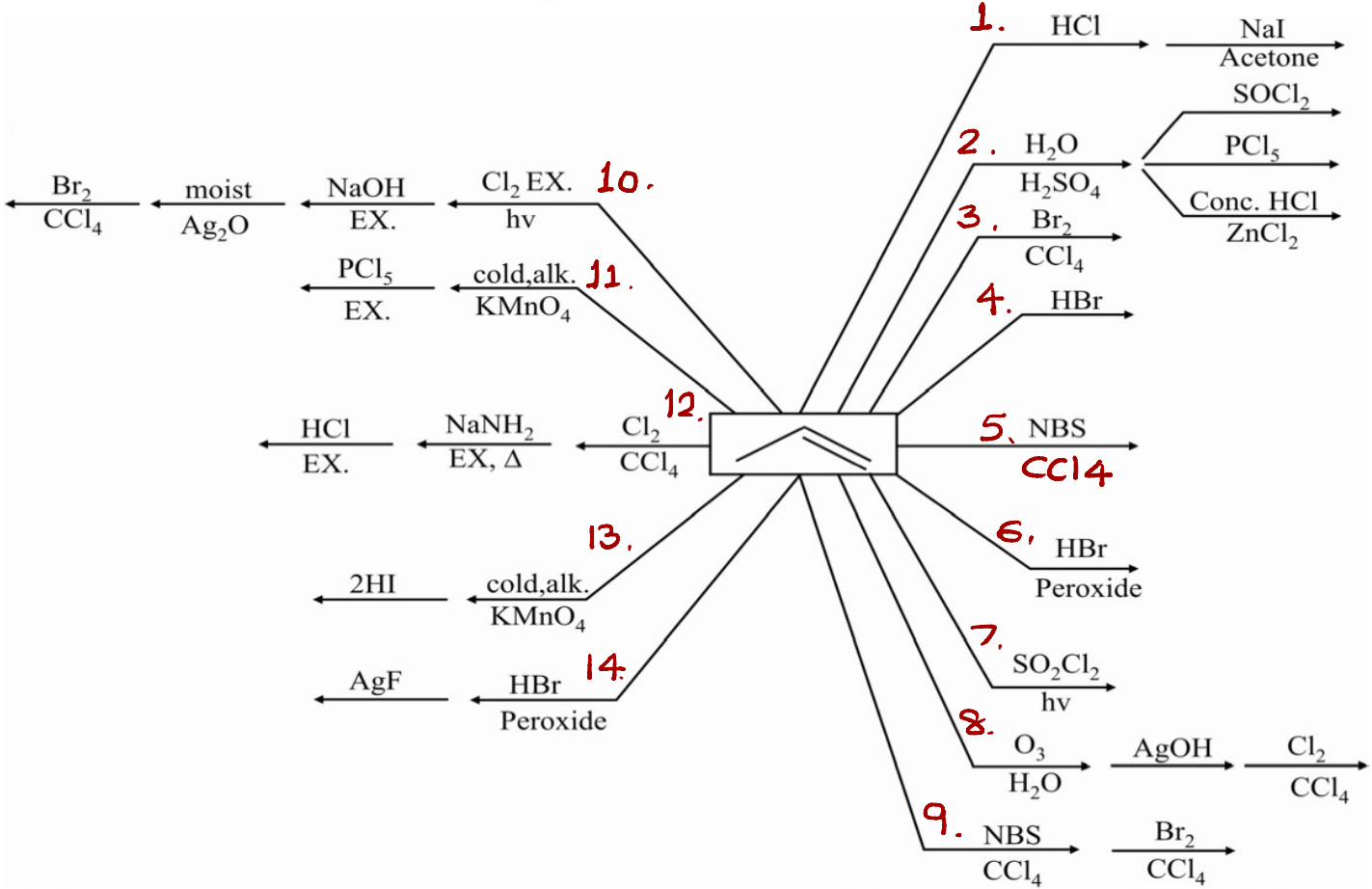
(ii) $CH_3–CH_2–CH=CH_2 + HCl \longrightarrow$ $CH_3CH_2\underset{Cl}{C}H-\underset{H}{C}H_2$

Markovnikov's position

(iii)



Q1. Identify the Final Product in the following reactions:



Questions from NCERT Book. Try yourself.

2. Why is sulphuric acid not used during the reaction of alcohols with KI?

3. Write structures of different dihalogen derivatives of propane.

4. Among the isomeric alkanes of molecular formula C_5H_{12}, identify the one that on photochemical chlorination yields

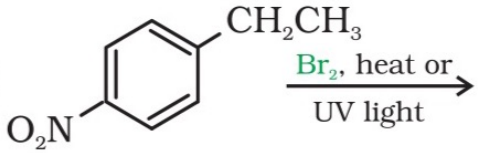
   (i) A single monochloride.

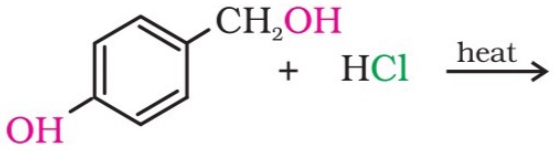
   (ii) Three isomeric monochlorides.

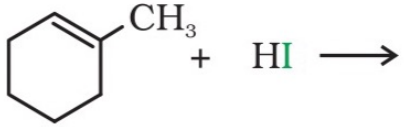
   (iii) Four isomeric monochlorides.

5. Draw the structures of major monohalo products in each of the following reactions:

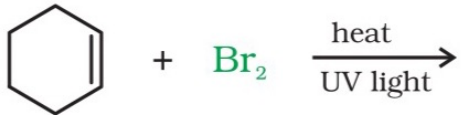
(i) 

(ii) 

(iii) 

(iv) 

(v) 

(vi) 

6. Which one of the following has the highest dipole moment?

   (i) CH_2Cl_2 (ii) $CHCl_3$ (iii) CCl_4

7. A hydrocarbon C_5H_{10} does not react with chlorine in dark but gives a single monochloro compound C_5H_9Cl in bright sunlight. Identify the hydrocarbon.

8. Write the isomers of the compound having formula C_4H_9Br.

9. Write the equations for the preparation of 1-iodobutane from

   (i) 1-butanol (ii) 1-chlorobutane (iii) but-1-ene.