

BRAIN INTERNATIONAL SCHOOL

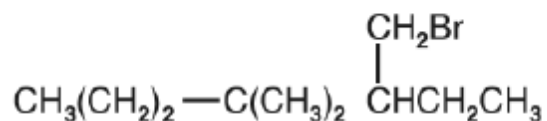
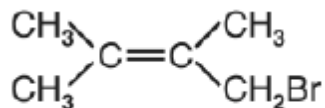
Chemistry Assignment

CLASS XII

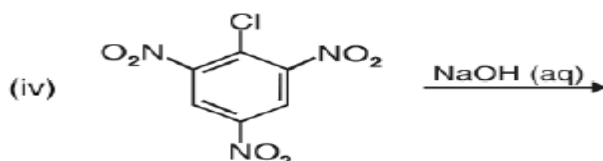
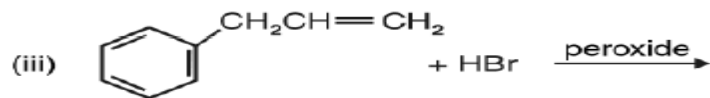
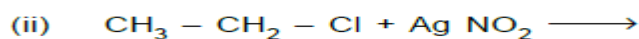
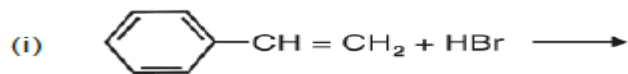
APRIL' 18

CH: Haloalkane & Haloarene:

1. Give IUPAC name



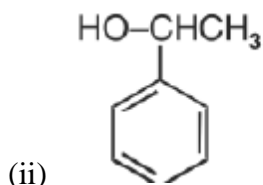
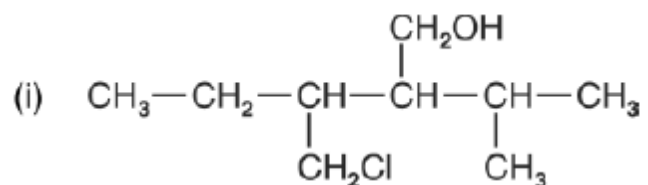
2. Arrange the following in the increasing order of properly indicated :
- (i) bromomethane, chloromethane, dichloromethane. (Increasing order of boiling points).
 - (ii) 1-chloropropane, isopropyl chloride, 1-chlorobutane (Increasing order of boiling point)
 - (iii) dichloromethane, chloroform, carbon tetrachloride. (Increasing order of dipole moment.
 - (iv) CH_3F , CH_3Cl , CH_3Br , CH_3I (Increasing reactivity towards nucleophilic substitution and increasing order of dipole moment)
 - (v) *o,m,p*-dichlorobenzenes (Increasing order of melting points).
3. Complete the following reactions :



4. How will you bring about the following conversions?
- benzene to 3-bromonitrobenzene
 - ethanol to but-1-yne
 - 1-bromopropane to 2-bromopropane
 - benzene to 4-bromo-1-nitrobenzene
 - aniline to chlorobenzene
 - 2-methyl-1-propene to 2-chloro-2-methylpropane
 - ethyl chloride to propanoic acid
 - but-1-ene to n-butyl iodide
 - benzene to phenylchloromethane.
 - tert-butyl bromide to isobutyl bromide.
5. Give a chemical test to distinguish between the following pairs of compounds:
- chlorobenzene and cyclohexylchloride.
 - vinyl chloride and ethyl chloride.
 - n-propyl bromide and isopropyl bromide

CH: Alcohol, Phenol & Ether

1. Write IUPAC names of the following compounds



2. Describe the following reactions with example :

- (i) Hydroboration oxidation of alkenes
- (ii) Acid catalysed dehydration of alcohols at 443K.
- (iii) Williamson synthesis
- (iv) Reimer-Tiemann reaction.
- (v) Kolbe's reaction
- (vi) Friedel-Crafts acylation of Anisole

3. How will you convert

- (i) propene to propan-1-ol.
- (ii) anisole to phenol
- (iii) butan-2-one to butan-2-ol
- (iv) ethanal to ethanol
- (v) phenol to ethoxybenzene
- (vi) 1-phenylethene to 1-phenylethanol
- (vii) formaldehyde to cyclohexylmethanol
- (viii) butyl bromide to pentan-1-ol.

(ix) toluene to benzyl alcohol

(x) 1-propoxypropane to propyl iodide

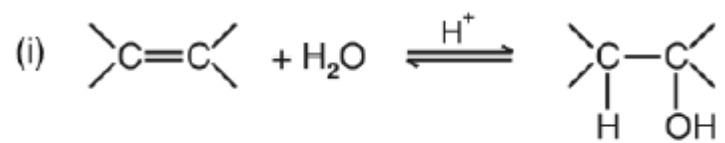
(xi) ethyl bromide to 1-ethoxyethane

(xii) methyl bromide to 2-methoxy-2-methylpropane

(xiii) ethyl bromide to ethoxybenzene

(xiv) ethanol to benzyl ethyl ether.

4. Write the mechanism for following reactions :



(acid catalysed hydration of alkenes)

BRAIN INTERNATIONAL SCHOOL

Chemistry Assignment

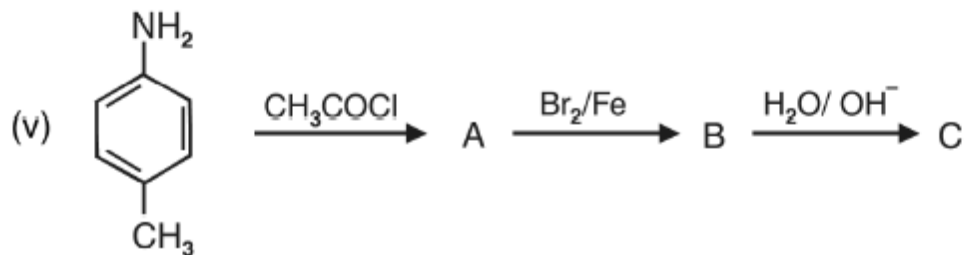
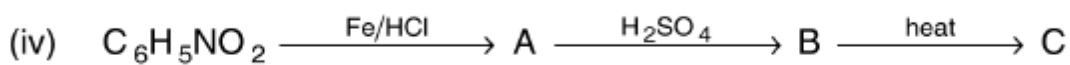
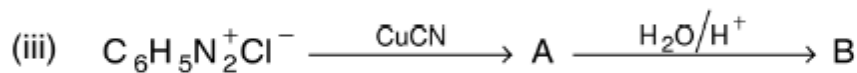
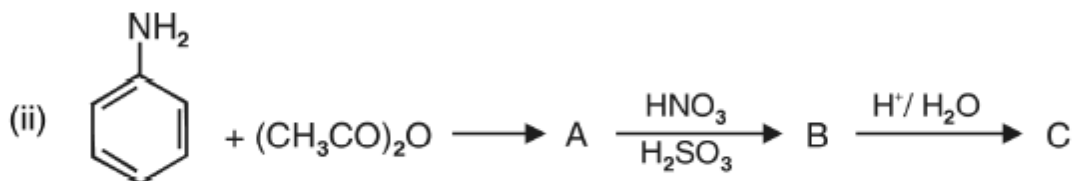
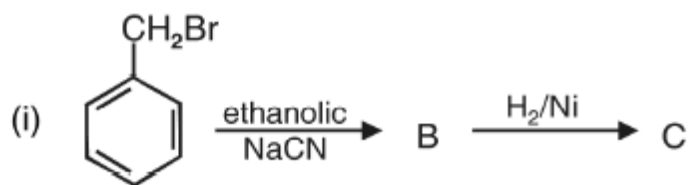
CLASS XII

MAY' 18

CH: Amine

1. How will you bring about the following conversions?
 - (i) benzene to Aniline
 - (ii) aniline to benzene
 - (iii) ethanoic acid to ethanamine
 - (iv) p-toluidine to 2-bromo-4-methylaniline.
 - (v) methylbromide to ethanamine
 - (vi) benzenediazonium chloride to nitrobenzene
 - (vii) ethylamine to methylamine
 - (ix) benzene to sulphanilic acid
 - (x) hexanenitrile to 1-aminopentane

2. Identify the missing reagent/product in the following reactions



3. Explain why :

- (i) The C–N–C bond angle in trimethyl amine is 108°
- (ii) the quaternary ammonium salts having four different alkyl groups are optically active
- (iii) alkylamines are more basic than ammonia
- (iv) aniline cannot be prepared by Gabriel phthalimide synthesis
- (v) Gabriel phthalimide synthesis is preferably used for synthesizing primary amines.
- (vi) ethylamine is soluble in water but aniline is not
- (vii) amines are soluble in dilute HCl.
- (viii) amines have lower boiling point than alcohols of comparable molecular masses.
- (ix) 1° amines have higher boiling points than 2° amines which in turn, are higher boiling than 3° amines.

- (x) The pK_b value of benzeneamine is 9.33 while that of ammonia is 4.75.
- (xi) aniline does not undergo Friedel-Crafts reaction.
- (xii) aniline readily forms 2, 4, 6-tribromoaniline on reaction with bromine water.
- (xiii) sulphanilic acid is soluble in water.
- (xiv) methylamine in water reacts with ferric chloride to precipitate hydrated ferric oxide.
- (xv) diazonium salt of aromatic amines are more stable than the diazonium salts of aliphatic amines.
- (xvi) Although amino group is o, p-directing in aromatic electrophilic substitution reactions, aniline on nitration gives a substantial amount of m-nitroaniline.

CH: Biomolecule

1. Name polysaccharide which is stored in the liver of animals.
2. What structural feature is required for a carbohydrate to behave as reducing sugar?
3. Give the significance of (+)-sign in the name D-(+)-glucose
4. Give the significance of prefix 'D' in the name D-(+)-glucose.
[Hint : 'D' Signifies that -OH group on C-5 is on the right hand side]
5. Give the structure of simplest optically active amino acid
6. How would you explain the amphoteric behavior of amino acids.
7. Give reason : Amylase present in the saliva becomes inactive in the stomach.
8. What type of linkage holds together the monomers of DNA and RNA
9. Mention the number of hydrogen bonds between adenine and thymine.
10. A child diagnosed with bone deformities, is likely to have the deficiency of which vitamin?