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**CHEMISTRY**

**1. An organic compound ‘ A ‘ having molecular formula C3H6 on treatment with aq. H2SO4give ‘B’ which on treatment with Lucas reagent gives ‘C’. The compound ‘C’ on treatment with ethanolic KOH gives back ‘A’ .Identify A, B, C .**

**2. An organic compound https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image019.pnggives a characteristic colour with aq. https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image020.pngsolution. (A) On reacting with https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image021.pngand NaOH at 400k under pressure gives (B) which on acidification gives a compound (C) .The compound (C) reacts with acetyl chloride to give (D) which is a popular pain killer. Deduce the structure of A,B,C & D.**

**3.** **An organic compound (X) when dissolved in ether and treated with magnesium metal forms a compound Y. The compound, Y, on treatment with acetaldehyde and the product on acid hydrolysis gives isopropyl alcohol. Identify the compound X. What is the general name of the compounds of the type Y.**

**4.** **A compound ‘A’ with molecular formula C4H10O on oxidation forms compound ‘B’ gives positive iodoform test and on reaction with CH3MgBr followed by hydrolysis gives (c). Identify A, B & C.**

**5.** **An aromatic compound (A) having molecular formula  https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image030.pngon treatment with CHCl3 and KOH gives a mixture two isomers ‘B’ and  ‘C’ both of  ‘B’ & ‘C’ give same product  ‘D’ when distilled with Zn dust. Oxidation of ‘D’ gives ‘E’ of formulahttps://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image031.png. The sodium salt of ‘E’ on heating with soda lime gives ‘F’ which may also be obtained by distilling ‘A’ with zinc dust. Identify compounds ‘A’ to ‘F’ giving sequence of reactions.**

**6.** **Compound ‘A’ of molecular formula https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image035.pnggives a compound ‘B’ of molecular formula https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image036.pngwhen treated with aq. NaOH. On oxidation the compound yields a mixture of acetic acid & propionic acid. Deduce the structure of A, B & C.** **Compound ‘A’ of molecular formula https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image035.pnggives a compound ‘B’ of molecular formula https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image036.pngwhen treated with aq. NaOH. On oxidation the compound yields a mixture of acetic acid & propionic acid. Deduce the structure of A, B & C.**

**7.**



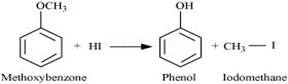
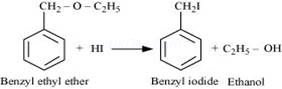
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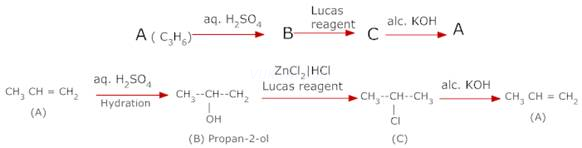
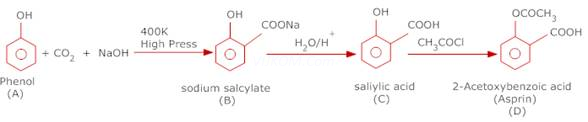
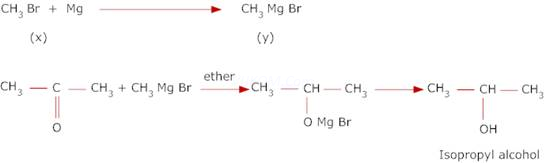
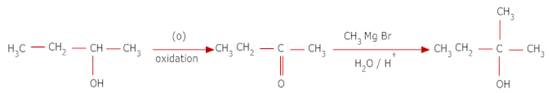
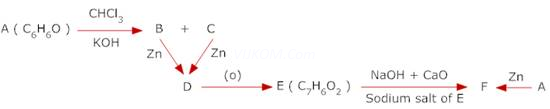
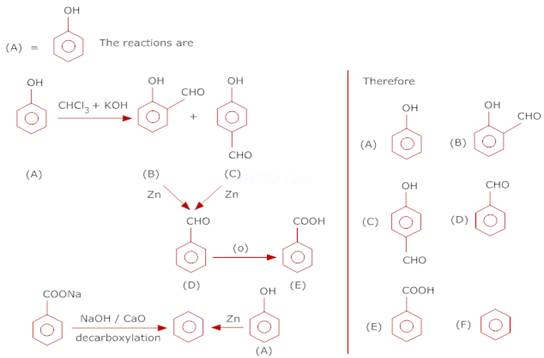
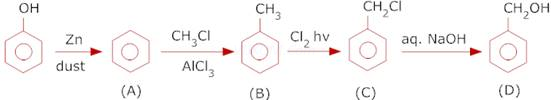
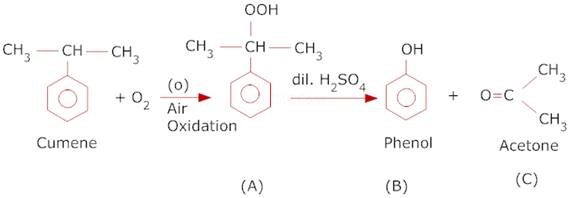
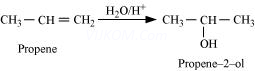
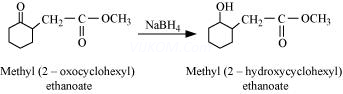


9. **Write structures of the products of the following reactions:**  
**(i)**  
CoolGyan.Org14361944236347.png  
**(ii)**  
CoolGyan.Org14361944245076.png  
**(iii)**  
CoolGyan.Org14361944261402.png

**10.** **Write the equation of the reaction of hydrogen iodide with:**  
**(i) 1-propoxypropane**  
**(ii) Methoxybenzene and**  
**(iii) Benzyl ethyl ether**

**Answers:**

**Write the equation of the reaction of hydrogen iodide with:**  
**(i) 1-propoxypropane**  
**(ii) Methoxybenzene and**  
**(iii) Benzyl ethyl ether**  
**Ans. (i)**  
CoolGyan.Org14361946662362.gif  
**(ii)**  
  
**(iii)**  


**An organic compound ‘ A ‘ having molecular formula https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image016.pngon treatment with aq. https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image017.png give ‘B’ which on treatment with Lucas reagent gives ‘C’. The compound ‘C’ on treatment with ethanolic KOH gives back ‘A’ .Identify A, B, C .**  
**Ans.**  
  
**12.  An organic compound https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image019.pnggives a characteristic colour with aq. https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image020.pngsolution. (A) On reacting with https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image021.pngand NaOH at 400k under pressure gives (B) which on acidification gives a compound (C) .The compound (C) reacts with acetyl chloride to give (D) which is a popular pain killer. Deduce the structure of A,B,C & D.**  
**Ans.**  
  
**13.  An organic compound (X) when dissolved in ether and treated with magnesium metal forms a compound Y. The compound, Y, on treatment with acetaldehyde and the product on acid hydrolysis gives isopropyl alcohol. Identify the compound X. What is the general name of the compounds of the type Y.**  
**Ans.** The compound X is https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image023.pngand Y is https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image024.pngThe compounds of the type ‘Y’ are called Grignard reagent.  
  
**14.  A compound ‘A’ with molecular formula C4H10O on oxidation forms compound ‘B’ gives positive iodoform test and on reaction with CH3MgBr followed by hydrolysis gives (c). Identify A, B & C.**  
**Ans.**The compound ‘B’ is obtained by oxidation of https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image026.pngand gives positive iodoform test and also reacts with https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image024.png, it must be methyl Ketone  , it must be methyl ketone having four carbon atoms i.e, https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image027.png.  
This can be obtained by oxidation of 2 – butanol i.e , https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image028.pngTherefore , the reactions are.  
  
**15.  An aromatic compound (A) having molecular formula  https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image030.pngon treatment with CHCl3 and KOH gives a mixture two isomers ‘B’ and  ‘C’ both of  ‘B’ & ‘C’ give same product  ‘D’ when distilled with Zn dust. Oxidation of ‘D’ gives ‘E’ of formulahttps://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image031.png. The sodium salt of ‘E’ on heating with soda lime gives ‘F’ which may also be obtained by distilling ‘A’ with zinc dust. Identify compounds ‘A’ to ‘F’ giving sequence of reactions.**  
**Ans.**  
The aromatic compound having molecular formula  https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image030.png and which gives a mixture of two isomers on reacting with https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image033.pngand KOH is phenol i.e.  
  
**16.  Compound ‘A’ of molecular formula https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image035.pnggives a compound ‘B’ of molecular formula https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image036.pngwhen treated with aq. NaOH. On oxidation the compound yields a mixture of acetic acid & propionic acid. Deduce the structure of A, B & C.**  
**Ans.**  
https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image037.png  
Since acetic acid & propionic acid are the products of oxidation of C which is a ketone, C is   https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image038.png. Since it is the oxidation product of B, therefore  
https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image039.png  
The reactions are  
https://cdn1.coolgyan.org/statics/12/chemistry/impq/ch11/3m/image040.png  
   
17.  
  
Ans.  
  
   
18.  
  
Ans.  
  
   
19. **Write structures of the products of the following reactions:**  
**(i)**  
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**(ii)**  
CoolGyan.Org14361944245076.png  
**(iii)**  
CoolGyan.Org14361944261402.png  
**Ans. (i)**  
  
**(ii)**  
  
**(iii)**  
