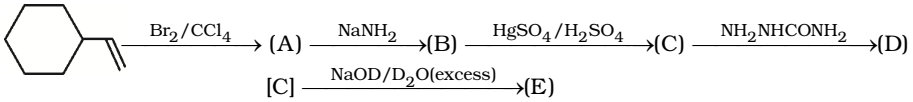
Date Planned : __ / __ / __	Daily Tutorial Sheet-5	Expected Duration : 45 Min
Actual Date of Attempt : __ / __ / __	JEE Advanced (Archive)	Exact Duration :_____

59. An alkene (A)$C_{16}H_{16}$ on ozonolysis gives only one product (B)C_8H_8O. Compound (B) reacts with KOH / NH_2NH_2 yielding a hydrocarbon (C)C_8H_{10}. Write the structures of compounds (B) and (C). Based on this information two isomeric structures can be proposed for alkene (A). Write their structures and identify the isomer which on catalytic hydrogenation (H_2 / Pd – C) gives a racemic mixture. **(2001)**

60. Identify (A), (B) (C), (D) and (E) in the following schemes and write their structures **(2001)**



61. Five isomeric para-disubstituted aromatic compounds A to E with molecular formula $C_8H_8O_2$ were given for identification. Based on the following observations, give structures of the compounds. **(2002)**

(i) Both A and B form a silver mirror with Tollen's regent; also B gives a positive test with $FeCl_3$ solution.

(ii) C gives positive iodoform test.

(iii) D is readily extracted in aqueous $NaHCO_3$ solution.

(iv) E on acid hydrolysis gives 1, 4-dihydroxybenzene.

62. (A), $C_6H_{12} \xrightarrow{HCl}$ (B), $C_6H_{13}Cl$ + (C), $C_6H_{13}Cl$ **(2003)**

(B) $\xrightarrow{\text{Alcoholic KOH}}$ (D), (an isomer of (A))

(D) $\xrightarrow{\text{Ozonolysis}}$ (E), (positive iodoform and negative Fehling's solution test)

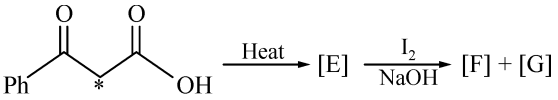
(A) $\xrightarrow{\text{Ozonolysis}}$ (F) + (G), (positive Tollen's test for both)

(F) + (G) $\xrightarrow{\text{Conc. NaOH}}$ HCOONa + A primary alcohol

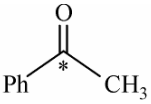
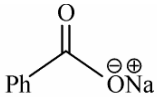
Identify the compounds(A) to (G)

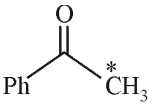
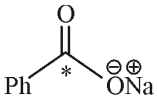
63. A compound $C_9H_7O_2Cl$ exists predominantly in enol form (A) and also in keto form (B). On oxidation with $KMnO_4$ it gives m-chlorobenzoic acid as one of the products. Identify the compounds (A) and (B). **(2003)**

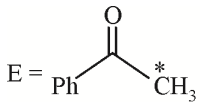
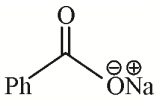
64. In the following reaction sequence, the correct structures of E, F and G are : **(2005)**

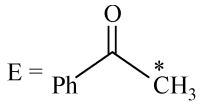
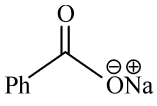


(* implies ^{13}C labeled carbon)

(A) E =  F =  G = CHI_3

(B) E =  F =  G = CHI_3

(C) E =  F =  G = CHI_3

(D) E =  F =  G = $\overset{*}{C}H_3I$

65. The smallest ketone and its next homologue are reacted with NH_2OH to form oxime. **(2006)**

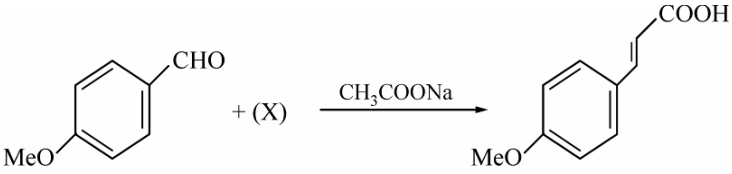
(A) Two different oximes are formed **(B)** Three different oximes are formed

(C) Two oximes are optically active **(D)** All oximes are optically active

66. Butan-2-one can be converted to propanoic acid by which of the following ? **(2006)**

(A) NaOH, NaI / H^+ **(B)** Fehling's solution

(C) NaOH, I_2 / H^+ **(D)** Tollen's reagent

67. 

What is X ? **(2006)**

(A) CH_3COOH **(B)** $BrCH_2COOH$

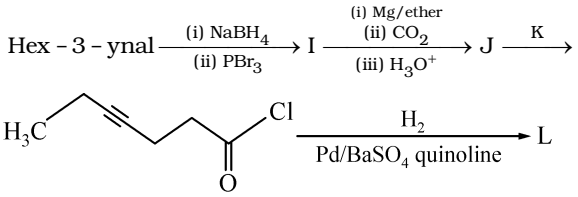
(C) $(CH_3CO)_2O$ **(D)** HOC – COOH

68. Match the compounds/ions in Column I with their properties/reactions in Column II. **(2007)**

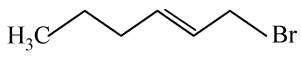
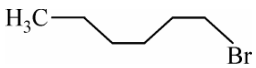
Column I		Column II	
(A)	C_6H_5CHO	**(p)**	Gives precipitate with 2, 4-dinitrophenylhydrazine
(B)	$CH_3C \equiv CH$	**(q)**	Gives precipitate with $AgNO_3$
(C)	CN^-	**(r)**	Is a nucleophile
(D)	I^-	**(s)**	Is involved in cyanohydrin formation

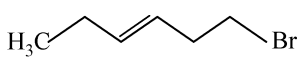
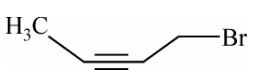
PARAGRAPH FOR QUESTIONS 69 - 71

In the following sequence, product I, J and L are formed. K represents a reagent. **(2008)**

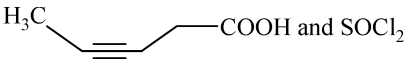
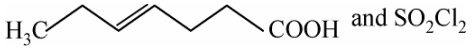


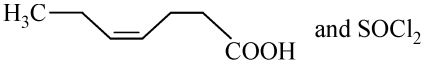
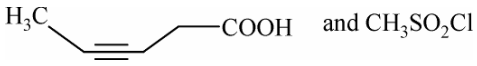
69. The structure of the product I is :

(A)  **(B)** 

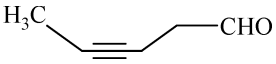
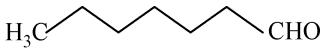
(C)  **(D)** 

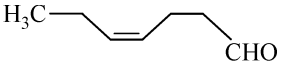
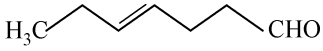
70. The structures of compounds J and K, respectively, are :

(A)  **(B)** 

(C)  **(D)** 

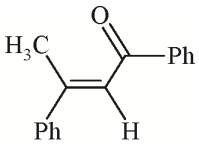
71. The structure of product L is :

(A)  **(B)** 

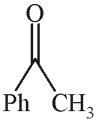
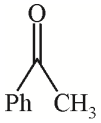
(C)  **(D)** 

PARAGRAPH FOR QUESTIONS 72 - 74

A tertiary alcohol **H** upon acid catalysed dehydration gives a product-**I.** Ozonolysis of **I** leads to compound **J** and **K**. Compound **J** upon reaction with KOH gives benzyl alcohol and a compound **L**, whereas **K** on reaction with KOH gives only **M.**

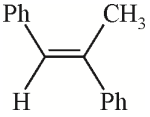
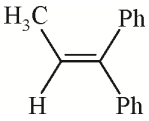
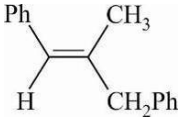
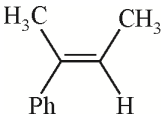
M = 

72. Compound **H** is formed by the reaction of : **(2008)**

(A)  + $PhMgBr$ **(B)**  + $PhCH_2MgBr$

(C)  + $PhCH_2MgBr$ **(D)** 

73. The structure of compound **I** is :

(A)  **(B)**  **(C)**  **(D)** 

74. The structures of compounds, **J, K** and **L**, respectively, are :

(A) $PhCOCH_3, PhCH_2COCH_3$ and $PhCH_2COO^-K^+$

(B) $PhCHO$, $PhCH_2CHO$ and $PhCOO^-K^+$

(C) $PhCOCH_3$, $PhCH_2CHO$ and $CH_3COO^-K^+$

(D) $PhCHO$, $PhCOCH_3$ and $PhCOO^-K^+$