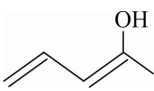


Date Planned : __ / __ / __	Daily Tutorial Sheet-4	Expected Duration : 45 Min
Actual Date of Attempt : __ / __ / __	JEE Advanced Archive	Exact Duration : _____

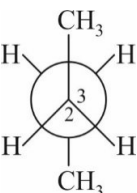
46. Explain, why o-hydroxybenzaldehyde is a liquid at room temperature while p- hydroxybenzaldehyde is a high melting solid ? (2000)

47. The number of isomers for the compound with molecular formula $C_2BrClFI$ is : (2001)
(A) 3 (B) 4 (C) 5 (D) 6

48. Which of the following compounds exhibits stereoisomerism ? (2002)
(A) 2-methylbutene (B) 3-methylbutyne
(C) 3-methylbutanoic acid (D) 2-methylbutanoic acid

49. Draw the resonating structures of  (2003)

50. Glycerine contain one hydroxyl group. (2004)

51.  C_2 is rotated anti-clockwise 120° about $C_2 - C_3$ bond. The resulting conformer is : (2004)

- (A) partially eclipsed (B) eclipsed (2004)
(C) gauche (D) staggered

52. (a) Draw Newman's projection for the less stable staggered form of butane. (2004)
(b) Relatively less stability of the staggered form is due to
(i) Torsional strain (ii) van der Waal's strain
(iii) Combination of the above two



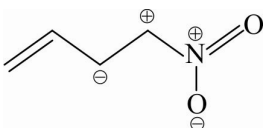
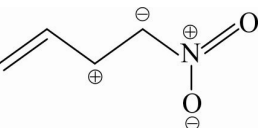
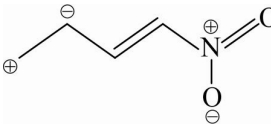
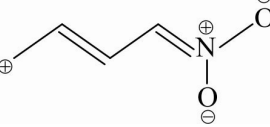

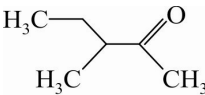
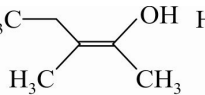
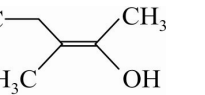
53. **Statement I** : p -hydroxybenzoic acid has a lower boiling point than o-hydroxybenzoic acid. (2004)
Statement II : o-hydroxybenzoic acid has intramolecular hydrogen bonding.

- (A) Statement-I is True, Statement-II is True and Statement-II is a correct explanation for Statement-I.
(B) Statement-I is True, Statement-II is True and Statement-II is NOT a correct explanation for Statement-I.
(C) Statement-I is True, Statement-II is False.
(D) Statement-I is False, Statement-II is True.

54. $\mu_{\text{obs}} = \sum \mu_i x_i$ (2005)

Where μ_i is the dipole moment of stable conformer and x_i is the mole fraction of that conformer.

- (a) Write stable conformer for $Z - CH_2 - CH_2 - Z$ in Newman's projection. If $\mu_{\text{solution}} = 1.0 \text{ D}$ and mole fraction of anti form = 0.82, find μ_{gauche} .
(b) Write most stable meso conformer of $(CHDY)_2$. If (i) $Y = CH_3$ about $C_2 - C_3$ rotation and (ii) $Y = OH$ about $C_1 - C_2$ rotation.

55. For 1-methoxy-1, 3-butadiene, which of the following resonating structure is least stable ? (2005)
- (A) $\ominus\text{CH}_2 - \overset{\oplus}{\text{C}}\text{H} - \text{CH} = \text{CH} - \text{O} - \text{CH}_3$ (B) $\ominus\text{CH}_2 - \text{CH} = \text{CH} - \text{CH} = \overset{\oplus}{\text{O}} - \text{CH}_3$ 
- (C) $\text{CH}_2 = \text{CH} - \overset{\oplus}{\text{C}}\text{H} - \overset{\ominus}{\text{C}}\text{H} - \text{O} - \text{CH}_3$ (D) $\text{CH}_2 = \text{CH} - \overset{\ominus}{\text{C}}\text{H} - \text{CH} = \overset{\oplus}{\text{O}} - \text{CH}_3$
56. The IUPAC name of $\text{C}_6\text{H}_5\text{COCl}$ is : (2006)
- (A) benzoyl chloride (B) benzene chloro ketone
- (C) benzene carbonyl chloride (D) chloro phenyl ketone
57. The number of isomers of C_6H_{14} is : (2007)
- (A) 4 (B) 5 (C) 6 (D) 7
58. **Statement I** : Molecules that are non-super imposable on their mirror image are chiral.  (2007)
- Statement II** : All chiral molecules have chiral centres.
- (A) Statement-1 is True, Statement-2 is True; Statement-2 is a correct explanation for Statement-1
- (B) Statement-1 is True, Statement-2 is True; Statement-2 is NOT a correct explanation for Statement-1
- (C) Statement-1 is True, Statement-2 is False
- (D) Statement-1 is False, Statement-2 is True
59. Among the following, the least stable resonance structure is : (2007)
- (A)  (B) 
- (C)  (D) 
- *60. The correct statements concerning the structures **E**, **F** and **G** is/are :  (2008)
- 


- (E) (F) (G)
- (A) **E**, **F** and **G** are resonance structures (B) **E**, **F** and **E**, **G** are tautomers
- (C) **F** and **G** are geometrical isomers (D) **F** and **G** are diastereomers