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| **Karan Arora**  **R.L. Institute M: 9416974837**  **Class : XI**  **“ORGANIC CHEMISTRY”** |

**Assignment – I**

1. Write the IUPAC names of the following compounds.

1. 2.

 

3. 4.

 

5. 6.

 

7. 8.

 

9. CH3 – CH2 – CH CH2 10. CH3 – C C – CH3

11. CH3 – CH CH – CH CH2 12. CH3 – C C – CH2 – C CH

13. HC C – CH2 – CH CH2 14. HC C – CH2 – CH2 – CH CH2

15. CH3 – CH CH – C CH 16. (CH3)2 CH – CH CH2

17. HC C – CH2 – CH2 – CH CH – CH3 18. (CH3)3 C – CH CH2

19. 20.

 

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21. 22.

 

23. 24.

 

25. 26.

 

27. 28.

 

29. 30.

 

31. 32.

 

33. 34.

 

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35. 36.

 

37. 38.

 

39. 40.

 

41. 42.

 

43. 44.

 

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49. 50.

 

51. 52.

 

53. 54.

 

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55. 56.

 

57. 58.

 

59. 60.

 

61. 62.

 

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65. 66.

 

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69. 70.

 

71. 72.

 

73. 74.

 

75.



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**Answers**

|  |  |
| --- | --- |
| 1. 3, 4 - Dimethylhexane | 2. 3,4-Diethylhexane |
| 3. 2, 2, 4 - Trimethylhexane | 4. 2, 2, 4 - Trimethylpentane |
| 5. 2, 3, 3 - Trimethylpentane | 6. 3 – Ethyl – 2, 2, 4 – trimethylpentane |
| 7. 3 – Ethyl – 2, 4, 5 – trimethylheptane | 8. 2, 5 – Dimethyl –4– (2 –methylpropyl) heptane |
| 9. But-1-ene | 10. But-2-yne |
| 11. Penta-1, 3-diene | 12. Hexa-1, 4-diyne |
| 13. Pent - 1 - en - 4 - yne | 14. Hex - 1 - en - 5 - yne |
| 15. Pent - 3 - en - 1 - yne | 16. 3-methylbut-1-ene |
| 17. Hept - 5 - en - 1 - yne | 18. 3, 3-Dimethylbut-1-ene |
| 19. 4-Methylpenta-1, 3-diene | 20. 2-Methylbuta-1, 3-diene |
| 21. 3-Ethylhex - 1 - en - 5 - yne | 22. 3-Methylpent-1 - en - 4 - yne |
| 23. 3-(2-Methylpropyl) hept - 1 - en - 4 - yne | 24. 4, 4-Dimethylhexan-3-amine |
| 25. 2-(1-Methylethyl) pent-1-ene | 26. 3-Propylhept-1-ene |
| 27. 4, 4-Dimethylpentan-2-ol | 28. 2, 2-Dimethylpentan-3-ol |
| 29. 2-Ethyl-3-methylbut-1-ene | 30. 2-Methylpentan-3-one |
| 31. 2-Ethyl-3-methylpentanal | 32. 3-Bromo-4, 4-dimethylpentanoic acid |
| 33. 3-Methylpentanamide | 34. 3-Bromobutanoyl chloride |
| 35. Butanenitrile | 36. But-2-en-1-amine |
| 37. Propane-1, 3-diamine | 38. Butanedial |
| 39. Butanedioic acid | 40. Pentane-2, 4-dione |
| 41. But-3-en-2-ol | 42. 3-Iodo-4-nitropentan-2-ol |
| 43. 1, 1-Dimethoxypropane | 44. Ethanoic propanoic anhydride |
| 45. 1-Bromo-2-ethoxyethane | 46. But-2-enal |
| 47. 2-Methyl-4-methoxypentan-3-one | 48. Methyl-3-methylpentanoate |
| 49. 2,4-Dimethylpentan-3-one | 50. 2-Methylbutanoic acid |
| 51. 5-Chloro-3-ethylpentan-2-one | 52. 2-Methylbutanoyl chloride |
| 53. 2,3-Dibromo-1-chloro-2-methylpentane | 54. 4-Iodo-3-nitrobutanal |
| 55. 4-Ketopentanal | 56. 4-Formylbutanenitrile |
| 57. 3-Carbamoylpentanoic acid | 58. 4-Hydroxypentan-2-one |
| 59. Methanamine | 60. Ethanamine |
| 61. Propan-1-amine | 62. N-Methylmethanamine |
| 63. N-Methylethanamine | 64. Ethane-1, 2-diamine |
| 65. Hexane-1, 6-diamine | 66. 2-Aminoethanol |
| 67. 4-Aminobutanoic acid | 68. Prop-2-en-1-amine |
| 69. Propan-2-amine | 70. N, N-Dimethylmethanamine |
| 71. N-Ethyl-N-methylethanamine | 72. N-Methyl-2-nitropropanamine |
| 73. Phenylmethanamine | 74. 2-Phenylethanamine |
| 75. 2-Methylpentan-3-amine |  |

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**Karan Arora**  **R.L. Institute M:9416974837**

**COMPETITION FOCUS – 1**

1. Write the IUPAC names of the following compounds.

1. 2.

 

3. 4.

 

5. 6.

 

7. 8.

 

9. 10.

 

11. 12.

 

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13. 14.

 

15. 16.

 

17. 18.

 

19. 20.

 

21. 22.

 

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27. 28.

 

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39. 40.

 

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81. 82.

 

83. 84.

 

85. 86.

 

87. 88.

 89. 90.

 

91. 92.

 

93. 94.

 

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95. 96.

 

97. 98.

 

99. 100.

 

**Answers**

|  |  |  |  |
| --- | --- | --- | --- |
| 1. 2-Phenyl ethanol | | 2. 1,1,1,-Trichloro-2,2-diphenyl ethane | |
| 3. 2-Phenyl ethanamine | | 4. 2-(Chloromethyl) chlorobenzene | |
| 5. 2,4-Dinitrobenzenamine | | 6. 4-Nitroso-N,N-dimethylbenzenamine | |
| 7. Benzene 1,4-dicarboxylic acid | | 8. 1-Phenylpropanone | |
| 9. 4-Cyclopentylbut-1-ene | | 10. Cyclohexylcyclohexane | |
| 11. 2-Hydroxycyclohexanecarbonyl chloride | | 12. 2-(2-Methylcyclobut-1-enyl) ethanal | |
| 13. 4-Cyclobutylbut-3-en-2-one | | 14. 2-Ethyl-1,4-dimethylcyclohexane | |
| 15. 1-(4-hydroxycyclohexyl) pentane-1,5-diol | | 16. 2-Nitrocyclohexanecarboxamide | |
| 17. 2-Isopropyl-5-methylcyclohexanol | | 18. 4-(4-Nitrocyclohexyl) benzaldehyde | |
| 19. But-2-ene | | 20. Hexa-1,3,5-triene | |
| 21. 2,3-Dimethylbuta-1,3-diene | | 22. 3-Ethylpenta-1,3-diene | |
| 23. 2,2-Dimethylbutane | | 24. Hex-1-yne | |
| 25. 3-Methylbutan-2-ol | | 26. 4-Methylpentan-2-amine | |
| 27. 4-Hydroxy-4-methylpentan-2-one | | 28. 1-Bromo-3-methylpentan-2-one | |
| 29. 3-Ketobutanal | | 30. 3,3-Dimethylbutanamide | |
| 31. Butane-2,3-dione | | 32. 4-Ketohexanal | |
| 33. 1-Butylcyclopentane | | 34. 5,6,6-Trimethylhept-1-ene | |
| 35. 4,4-di (1-propenyl)hepta-2,5-diene | | 36. 2-Methylcyclopent-3-ene carboxylic acid | |
| 37. 3-Bromo-N-methylbutanamide | | 38. 3-Chloro-5-fluoro-3,5-dimethylheptane | |
| 39. Hex-2-en-4-ynoic acid | | 40. 2,2,5-Trimethylheptane | |
| 41. 4-(1,1-Dimethylethyl) heptane | | 42. 5-(1,2-Dimethylpropyl) nonane | |
| 43. 2-Bromo-3-methylbut-2-en-1-ol | | 44. Hex-1-en-3-ol | |
| 45. 4-Methylpent-3-en-2-one | | 46. 3,4-dimethylhexane | |
| 47. 3,4-Diethyl-4-methylheptane | | 48. 2,4-Dimethylpentan-3-one | |
| 49. Pentane-2,4-dione | | 50. 6-Methyloctan-3-ol | |
| 51. 5-(1,1-Dimethylethyl)-6-ethyl-2-methyloctane | | 52. 5-Propyloct-2-yne | |
| 53. 4-Ethyl-2, 4-dimethylhept-1-ene | | 54. 2-Chloro-3-ethylpenta-1, 4-diene | |
| 55. 3-Methylbut-1-yne | | 56. 2-Chlorobuta-1, 3-diene | |
| 57. 3-Chloro-1-phenylprop-1-ene | | 58. 1-Bromobut-2-ene | |
| 59. But-2-en-1-al | | 60. But-2-en-1-oic acid | |
| 61. 4-Methylpent-3-en-2-one | | 62. Prop-2-ene-1-nitrile | |
| 63. Ethane-1, 2-dial | | 64. But-2-yne-1, 4-dioic acid | |
| 65. 2-Ethylprop-2-en-1-ol | | 66. Methyl 2-methylprop-2-en-1-oate | |
| 67. 2, 4-Dimethyl-3-(1-methylethyl)pentan-3-ol | | 68. Hexane-2, 4-dione | |
| 69. 3-Chloro-N-ethyl-3-methylpentan-1-amide | | 70. 2-Methoxypropanal | |
| 71. 4-Bromo-3-methylpent-2-ene | | 72. 3-Methylpentanal | |
| 73. 2-Methylbutanoic acid | | 74. 3-Bromo-5-methylhexan-2-ol | |
| 75. Ethanoic methanoic anhydride | | 76. 3-Methylpent-3-ene-1-nitrile | |
| 77. 1-Ethoxypropn-2-ol | | 78. 3-Chloroprop-1-ene | |
| 79. 3-Hydroxy-4-methylpent-4-ene-1-nitrile | | 80. 2-Carbamoylpropanoic acid | |
| 81. 3-Carboxy-1, 5-pentanedioic acid | | 82. 5-Amino-3-methylpentan-2-one | |
| 83. 3-Hydroxy-4-methylpent-4-en-1-al | | 84. 5-Chloro-3-ethylpentan-2-one | |
| 85. 3-Carboxy-3-formylpentane-1,5-dioic acid | | 86. 4, 4-Dimethylhept-5-en-2-ol | |
| 87. Methyl 3-bromo-2-hydroxy-2-methylbutan  -1-oate | | 88. 2-Methyl-4-nitropentan-2-ol | |
| 89. But-2-en-1-al | | 90. 4-Hydroxybutane nitrile | |
| 91. 2-(2-Bromophenyl) ethanal | | 92. 3-Ethyl-4-methylhept-5-en-2-one | |
| 93. 3, 3, 5-Trimethylhex-1-en-2-ol | | 94. 2-Oxopropanal | |
| 95. 2-Ethyl-3-methylpent-2-en-1-al | | 96. 7-Methyl-3-nitrooct-4-en-2-ol | |
| 97. 5-Formylhex-2-en-1-oic acid | | 98. 3-Formyl-5-hydroxyhexan-1-oic acid | |
| 99. 3-Hydroxy-4-methylhex-5-yn-1-oyl chloride | | 100. 4-Bromo-4-chloro-2-hydroxyhex-5-en-1-al | |
|  | |

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**Karan Arora M: 9416974837**

**COMPETITION FOCUS – 2**

1. How many and bonds are present in CH2 CH – CH CH – CH3 ?

|  |  |  |  |
| --- | --- | --- | --- |
| a) 9 , 4 | b) 12 , 2 | c) 12 , 6 | d) 10 , 3 |

1. Which of the following represents the given sequence of hybridisation of carbon atoms from left to right sp2 , sp2 , sp and sp ?

|  |  |
| --- | --- |
| a) CH2 CH – C CH | b) HC C – CH CH2 |
| c) H3C – CH CH – CH3 | d) CH2 CH – CH CH2 |

1. The hybridisation of carbons of C – C single bond of HC C – CH CH2 is

|  |  |  |  |
| --- | --- | --- | --- |
| a) sp3 – sp3 | b) sp – sp2 | c) sp3 – sp | d) sp2 – sp3 |

1. What are the hybridisation and shapes of the following molecules ? (i) CH3F (ii) HC N

|  |  |
| --- | --- |
| a) (i) sp2 , trigonal planar ; (ii) sp3 , tetrahedral | b) (i) sp3 , tetrahedral ; (ii) sp , linear |
| c) (i) sp , linear ; (ii) sp2 , trigonal planar | d) (i) sp2 , trigonal planar ; (ii) sp2 , trigonal planar |

1. Match the column I with column II and mark the appropriate choice.

|  |  |
| --- | --- |
| Column I | Column II |
| (A) | (i) |
| (B) | (ii) |
| (C) | (iii) |
| (D) | (iv) |

a) (A)→ (iii) , (B)→ (iv) , (C)→ (i) , (D)→ (ii)

b) (A)→ (iv) , (B)→ (iii) , (C)→ (ii) , (D)→ (i)

c) (A)→ (i) , (B)→ (ii) , (C)→ (iv) , (D)→ (iii)

d) (A)→ (ii) , (B)→ (iii) , (C)→ (i) , (D)→ (iv)

ORGANIC CHEMISTRY : SOME BASIC PRINCIPLES AND TECHNIQUES Page No : 14

1. Which of the following is alicyclic heterocyclic compound ?

|  |  |  |  |
| --- | --- | --- | --- |
| a) | b) | c) | d) |

1. Which of the following correctly matched the bond line and condensed structure of the compounds ?

(i) (ii)

 ,  **;**  , 

(iii)

 , 

|  |  |  |  |
| --- | --- | --- | --- |
| a) Only (i) | b) Only (ii) | c) Only (i) and (ii) | d) All are correct |

1. IUPAC name of given structure are : (i) (ii)

 

|  |  |
| --- | --- |
| a) (i) hexane ; (ii) 3-methylbutane | b) (i) isopentane ; (ii) 2, 2-dimethylbutane |
| c) (i) 3-ethylbutane ; (ii) isopentane | d) (i) 3-methylpentane ; (ii) 2-methylbutane |

1. IUPAC name of the compound is



|  |  |
| --- | --- |
| a) 2, 3-dimethylheptane | b) 3-methyl-4-ethyloctane |
| c) 5-ethyl-6-methyloctane | d) 4-ethyl-3-methyloctane |

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**Karan Arora M: 9416974837**

1. How many primary, secondary, tertiary and quaternary carbon atoms are present in the following compound ?



a) One primary , two secondary and one tertiary

b) Five primary , three secondary

c) Five primary , one secondary , one tertiary and one quaternary

d) Four primary , two secondary and two quaternary

1. The IUPAC name of the compound having formula



|  |  |
| --- | --- |
| a) 3, 3, 3-trimethylprop-1-ene | b) 1, 1, 1-trimethylprop-2-ene |
| c) 3, 3-dimethylpent-1-ene | d) 2, 2-dimethylbut-3-ene |

1. IUPAC name of (CH3)3 C – CH CH2 is

|  |  |
| --- | --- |
| a) 2, 2-dimethylbut-3-ene | b) 2, 2-dimethylpent-4-ene |
| c) 3, 3-dimethylbut-1-ene | d) Hex-1-ene |

1. Which of the following represents : 3-methylpenta-1, 3-diene ?

|  |  |
| --- | --- |
| a) CH2 CH (CH2)2 CH3 | b) CH2 CH CH (CH3) CH2 CH3 |
| c) CH3 CH C (CH3) CH CH2 | d) CH3 CH C (CH3)2 |

1. The correct IUPAC name of the compound is



|  |  |
| --- | --- |
| a) 3-heptyl-5-methylhept-3-ene | b) 5, 6-diethyl-3-methyldec-4-ene |
| c) 5-butyl-3-methyloct-4-ene | d) 8-methyl-3-propylhex-3-ene |

1. The correct decreasing order of priority for the functional groups of organic compounds in the IUPAC system of nomenclature is

|  |  |
| --- | --- |
| a) – CONH2 , – CHO , – SO3H , – COOH | b) – COOH , – SO3H , – CONH2 , – CHO |
| c) – SO3H , – COOH , – CONH2 , – CHO | d) – CHO , – COOH , – SO3H , – CONH2 |

ORGANIC CHEMISTRY : SOME BASIC PRINCIPLES AND TECHNIQUES Page No : 16

1. The correct representation of 4-hydroxy-2-methylpent-2-en-1-al is

|  |  |
| --- | --- |
| a) | b) |
| c) | d) |

1. The correct name of following compound is



|  |  |
| --- | --- |
| a) 2-cyano-3-oxopentanal | b) 2-formyl-3-oxopentanenitrile |
| c) 2-cyano-1, 3-pentadiene | d) 1, 3-dioxo-2-cyanopentane |

1. The IUPAC name of the compound is



|  |  |
| --- | --- |
| a) 1-chloro-1-oxo-2,3-dimethylpentane | b) 2-ethyl-3-methylbutanoyl chloride |
| c) 2, 3-dimethylpentanoyl chloride | d) 3, 4-dimethylpentanoyl chloride |

1. Correct representation of 3-methylpent-3-en-2-ol is ?

|  |  |  |  |
| --- | --- | --- | --- |
| a) | b) | c) | d) |

1. The correct IUPAC name of the compound is



|  |  |
| --- | --- |
| a) 4-formyl-2-oxocyclohexanecarboxylic acid | b) 4-carboxy-2-oxocyclohexanal |
| c) 4-carboxy-1-formylcyclohexanone | d) 2-carboxy-5-formyl-1-oxocyclohexane |

ORGANIC CHEMISTRY : SOME BASIC PRINCIPLES AND TECHNIQUES Page No : 17

1. The correct IUPAC name of the following compound is



|  |  |
| --- | --- |
| a) 2-ethyl-1-chlorocyclohexanol | b) 4-chloro-5-ethylcyclohexanol |
| c) 4-hydroxy-2-ethyl-1-chlorocyclohexane | d) 4-chloro-3-ethylcyclohexanol |

1. Match the column I with column II and mark the appropriate choice.

|  |  |
| --- | --- |
| Column I | Column II |
| (A) | (i) 3,7-dimethylocta-1, 3, 6-triene |
| (B) | (ii) 4-methyl-5-oxohexanoic acid |
| (C) | (iii) 3,3,5-trimethylhex-1-en-2-ol |
| (D) | (iv) 4-hydroxy-4-methylpentan-2-one |

a) (A)→ (ii) , (B)→ (i) , (C)→ (iii) , (D)→ (iv)

b) (A)→ (iv) , (B)→ (ii) , (C)→ (i) , (D)→ (iii)

c) (A)→ (i) , (B)→ (iii) , (C)→ (ii) , (D)→ (iv)

d) (A)→ (iii) , (B)→ (iv) , (C)→ (ii) , (D)→ (i)

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**Karan Arora M: 9416974837**

1. The IUPAC name of the compound shown below is



|  |  |
| --- | --- |
| a) 2-bromo-6-chlorocyclohex-1-ene | b) 6-bromo-2-chlorocyclohexene |
| c) 3-bromo-1-chlorocyclohexene | d) 1-bromo-3-chlorocyclohexene |

1. Which of the following names of substituted benzene compounds is not correct ?

|  |  |
| --- | --- |
| a) 2-chloro-4-methylanisole | b) 4-ethyl-2-methylaniline |
| c) 4-chloro-1,3-dinitrobenzene | d) 3,4-dimethylphenol |

**Answers**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1. b | 1. a | 1. b | 1. b | 1. a | 1. a | 1. d | 1. d |
| 1. d | 1. c | 1. c | 1. c | 1. c | 1. b | 1. b | 1. a |
| 1. b | 1. c | 1. a | 1. a | 1. d | 1. d | 1. c | 1. c |

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