CHEMISTRY MCQ BOOKLET

Grade 9 · Chapter 13 · Organic Chemistry

FBISE / National Book Foundation Model Textbook companion

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Independent MCQs on homologous series, formulae, isomerism, classification, and functional groups. Not copied from the book exercise. Total: 108 questions. Each item has four options, the correct letter, and a short explanation of why it is correct.

A. Important / Main Topics

1. Organic chemistry is the study of:

(A) carbon-containing compounds and their properties
(B) only noble gases
(C) only NaCl
(D) only nuclear fission

Correct Answer: A

Explanation: Carbon chemistry, with a few school exceptions.

2. CO2, CO, carbonates, and carbides are usually treated as:

(A) typical organics in this course
(B) inorganic exceptions
(C) alkanes
(D) phenols

Correct Answer: B

Explanation: Their chemistry differs from hydrocarbons and derivatives.

3. Organic compounds are also defined as:

(A) only metals
(B) only distilled water
(C) hydrocarbons and their derivatives
(D) only NPK salts

Correct Answer: C

Explanation: That is the chapter's second definition.

4. Carbon usually bonds with H and often O, N, S, P, and:

(A) only sodium metal always
(B) only argon
(C) only helium
(D) halogens; metals are rare in typical organics

Correct Answer: D

Explanation: C–H frameworks plus common non-metals — so "halogens; metals are rare in typical organics" is the matching option.

5. A homologous series is a family in which adjacent members differ by:

(A) CH2
(B) O2
(C) NaCl
(D) Ne

Correct Answer: A

Explanation: Each step adds a methylene unit — so "CH2" is the matching option.

6. Members of a homologous series share a functional group and:

(A) always the same boiling point
(B) the same general formula

(C) always the same colour
(D) nuclear charge of uranium

Correct Answer: B

Explanation: General formula + functional group define the family.

7. They also show a trend in physical properties and:

(A) always identical melting points
(B) metallic bonding
(C) similar chemical reactions
(D) ionic lattices like NaCl always

Correct Answer: C

Explanation: Chemistry is alike; boiling points change gradually.

8. Alkane general formula is:

(A) CnH2n
(B) CnH2n−2
(C) CnH2n+1OH
(D) CnH2n+2

Correct Answer: D

Explanation: Saturated open-chain alkanes — so "CnH2n+2" is the matching option.

9. Alkene general formula (one C=C, open chain) is:

(A) CnH2n
(B) CnH2n+2
(C) CnH2n−2
(D) RCOOH

Correct Answer: A

Explanation: Two hydrogens fewer than the alkane — so "CnH2n" is the matching option.

10. Alkyne general formula (one C≡C, open chain) is:

(A) CnH2n+2
(B) CnH2n−2
(C) CnH2n
(D) RNH2

Correct Answer: B

Explanation: Two hydrogens fewer than the alkene — so "CnH2n−2" is the matching option.

11. Alcohol general formula given is:

(A) CnH2n
(B) CnH2n−2
(C) CnH2n+1OH
(D) RCOOR′

Correct Answer: C

Explanation: ROH for the simple series — so "CnH2n+1OH" is the matching option.

12. Carboxylic acid general formula given is:

(A) CnH2n+2
(B) ROR′
(C) Ar–H only
(D) CnH2n+1COOH

Correct Answer: D

Explanation: The carboxyl series — so "CnH2n+1COOH" is the matching option.

13. For n = 1 the alkane is:

(A) methane, CH4
(B) ethene, C2H4

(C) ethyne, C2H2
(D) ethanol

Correct Answer: A

Explanation: Substitute n into CnH2n+2 — so "methane, CH4" is the matching option.

14. For n = 2 the alkane is:

(A) CH4
(B) C2H6
(C) C2H4
(D) C2H2

Correct Answer: B

Explanation: Ethane — so "C2H6" is the matching option.

15. For n = 3 the alkane is:

(A) C3H6 only as the only possibility
(B) C3H4 only
(C) C3H8
(D) C3H3OH

Correct Answer: C

Explanation: Propane — so "C3H8" is the matching option.

16. Ethene (n = 2 alkene) is:

(A) C2H6
(B) CH4
(C) C2H2
(D) C2H4

Correct Answer: D

Explanation: CnH2n with n = 2 — so "C2H4" is the matching option.

17. Methanol from the alcohol formula with n = 1 is:

(A) CH3OH
(B) C2H5OH
(C) HCOOH
(D) CH3COOH

Correct Answer: A

Explanation: C1H2(1)+1OH = CH3OH — so "CH3OH" is the matching option.

18. A structural formula shows:

(A) only the percentage of nitrogen in air
(B) how atoms are arranged and bonded
(C) only melting point
(D) only pH

Correct Answer: B

Explanation: It is an unambiguous bonding picture — so "how atoms are arranged and bonded" is the matching option.

19. C2H6O can be ethanol CH3CH2OH or dimethyl ether CH3OCH3; they are:

(A) the same compound
(B) isotopes
(C) structural isomers
(D) allotropes of oxygen

Correct Answer: C

Explanation: C2H6O can be ethanol CH3CH2OH or dimethyl ether CH3OCH3; they are structural isomers.

20. In ethanol the oxygen is bonded to one carbon and hydrogen; in dimethyl ether oxygen is bonded to:

(A) two hydrogens only
(B) a benzene ring only
(C) a carboxyl carbon only
(D) two carbons

Correct Answer: D

Explanation: In ethanol the oxygen is bonded to one carbon and hydrogen; in dimethyl ether oxygen is bonded to two carbons.

21. C3H6O2 can be propanoic acid or methyl ethanoate, showing:

(A) isomerism of acid vs ester
(B) identical structures
(C) that both are alkanes
(D) that both are noble gases

Correct Answer: A

Explanation: C3H6O2 can be propanoic acid or methyl ethanoate, showing isomerism of acid vs ester.

22. A condensed formula lists chain carbons and attached hydrogens:

(A) as a pie chart of air
(B) in naming sequence, using group abbreviations
(C) only as a molecular mass
(D) only as a pH value

Correct Answer: B

Explanation: CH3CH2CH3 is condensed propane — so "in naming sequence, using group abbreviations" is the matching option.

23. —CH3 is a:

(A) methylene group
(B) carboxyl group
(C) methyl group
(D) carbonyl of a ketone only

Correct Answer: C

Explanation: Terminal methyl — so "methyl group" is the matching option.

24. —CH2— is a:

(A) phenyl group
(B) amino group
(C) ester group
(D) methylene group

Correct Answer: D

Explanation: The repeating homologous unit — so "methylene group" is the matching option.

25. The stem pent- means:

(A) five carbons
(B) three carbons
(C) four carbons
(D) six carbons

Correct Answer: A

Explanation: Pentane has five carbons — so "five carbons" is the matching option.

26. The ending -ane tells you the compound is an:

(A) alkene
(B) alkane
(C) alcohol
(D) acid always

Correct Answer: B

Explanation: Saturated hydrocarbon suffix — so “alkane” is the matching option.

27. Pentane molecular formula is:

(A) C5H10
(B) C5H8
(C) C5H12
(D) C5H5OH

Correct Answer: C

Explanation: CnH2n+2 with n = 5 — so “C5H12” is the matching option.

28. Butane is C4H10 with condensed formula:

(A) CH3CH3
(B) CH2=CH2
(C) HC≡CH
(D) CH3CH2CH2CH3

Correct Answer: D

Explanation: Straight-chain butane — so “CH3CH2CH2CH3” is the matching option.

29. Hexane is:

(A) C6H14
(B) C6H12 as the alkane
(C) C6H10 as the alkane
(D) C6H6 as hexane

Correct Answer: A

Explanation: n = 6 alkane — so “C6H14” is the matching option.

30. Octane is:

(A) C8H16 as the open alkane
(B) C8H18
(C) C8H8
(D) CH4

Correct Answer: B

Explanation: Petrol-range alkane name — so “C8H18” is the matching option.

31. Saturated hydrocarbons have:

(A) at least one C=C
(B) at least one C≡C
(C) only C–C single bonds
(D) only ionic Na–Cl bonds

Correct Answer: C

Explanation: Saturated hydrocarbons have only C–C single bonds.

32. Unsaturated hydrocarbons contain:

(A) only C–H ionic bonds
(B) only metals
(C) only noble gases
(D) C–C multiple bonds

Correct Answer: D

Explanation: Double or triple carbon–carbon bonds — so “C–C multiple bonds” is the matching option.

33. Alkenes contain at least one:

(A) C=C
(B) C≡C only
(C) OH on benzene only
(D) COOH only

Correct Answer: A

Explanation: Carbon–carbon double bond — so “C=C” is the matching option.

34. Alkynes contain at least one:

(A) only C–C singles
(B) C≡C
(C) only peptide bonds
(D) only glycosidic links

Correct Answer: B

Explanation: Carbon–carbon triple bond — so “C≡C” is the matching option.

35. Ethene is H2C=CH2; ethyne is:

(A) CH4
(B) CH3CH3
(C) HC≡CH
(D) CH3OH

Correct Answer: C

Explanation: The two-carbon alkyne — so “HC≡CH” is the matching option.

36. CH3CH2CH3 is:

(A) an alkene
(B) an alkyne
(C) an ester
(D) saturated

Correct Answer: D

Explanation: Propane has only single bonds — so “saturated” is the matching option.

37. CH3C≡CH is:

(A) unsaturated (alkyne)
(B) an alkane
(C) a carboxylic acid
(D) a carbohydrate

Correct Answer: A

Explanation: A triple bond — so “unsaturated (alkyne)” is the matching option.

38. CH3CH=CH2 is:

(A) methane
(B) unsaturated (alkene)
(C) an amine
(D) CO2

Correct Answer: B

Explanation: A double bond — so “unsaturated (alkene)” is the matching option.

39. Carbon’s four valence electrons let it form:

(A) only one bond always
(B) metallic lattices like copper
(C) four bonds (tetravalency)
(D) only ionic bonds to Na

Correct Answer: C

Explanation: Four covalent bonds — so “four bonds (tetravalency)” is the matching option.

40. Catenation is carbon’s ability to:

(A) only melt at 0 °C
(B) only form CO2
(C) only dissolve in water always
(D) bond to other carbons in long chains, branches, and rings

Correct Answer: D

Explanation: That is why so many organics exist — so "bond to other carbons in long chains, branches, and rings" is the matching option.

41. Silicon is contrasted as forming only:

(A) short chains, unlike carbon's almost limitless catenation
(B) longer chains than carbon
(C) peptide bonds
(D) DNA double helices

Correct Answer: A

Explanation: Carbon is unique here — so "short chains, unlike carbon's almost limitless catenation" is the matching option.

42. Structural isomers have the same molecular formula but different:

(A) numbers of protons always
(B) atom arrangements
(C) noble-gas cores
(D) atmospheric percents

Correct Answer: B

Explanation: Connectivity (or arrangement) differs — so "atom arrangements" is the matching option.

43. C4H10 as CH3CH2CH2CH3 versus CH3CH(CH3)CH3 illustrates:

(A) that they have different molecular formulae
(B) alkyne chemistry
(C) chain isomerism of butane
(D) phenol antiseptic use

Correct Answer: C

Explanation: n-butane vs isobutane — so "chain isomerism of butane" is the matching option.

44. C4H8 as CH3CH2CH=CH2 versus CH3CH=CHCH3 illustrates:

(A) identical compounds
(B) both being alkanes
(C) both being amines
(D) position isomerism of butene

Correct Answer: D

Explanation: 1-butene vs 2-butene — so "position isomerism of butene" is the matching option.

45. Open-chain (acyclic) compounds have:

(A) no rings; carbons in a row or with branches
(B) only benzene rings
(C) only pyridine rings
(D) only DNA helices

Correct Answer: A

Explanation: Linear or branched skeletons — so "no rings; carbons in a row or with branches" is the matching option.

46. Closed-chain (cyclic) compounds contain:

(A) only straight pentane
(B) rings of atoms
(C) only NaCl crystals
(D) only argon

Correct Answer: B

Explanation: Carbons (or heteroatoms) loop — so "rings of atoms" is the matching option.

47. Straight-chain examples include propane, butane, and:

(A) cyclopropane
(B) benzene

(C) pentane
(D) pyridine

Correct Answer: C

Explanation: Unbranched open chains — so “pentane” is the matching option.

48. iso-Butane and neo-pentane are:

(A) homocyclic aromatics
(B) heterocycles with N, O, S
(C) inorganic carbonates
(D) branched open-chain alkanes

Correct Answer: D

Explanation: Side-chain carbons off a main chain — so “branched open-chain alkanes” is the matching option.

49. Cyclopropane, cyclobutane, and cyclohexane are:

(A) homocyclic/carbocyclic rings of CH2 units
(B) heterocycles with nitrogen
(C) esters
(D) proteins

Correct Answer: A

Explanation: Rings made only of carbon (plus H) — so “homocyclic/carbocyclic rings of CH2 units” is the matching option.

50. Benzene can be drawn as a hexagon with alternating double bonds or with:

(A) only a triple bond in the middle
(B) a circle for delocalised electrons
(C) a peptide chain
(D) a phosphate backbone

Correct Answer: B

Explanation: Aromatic representation — so “a circle for delocalised electrons” is the matching option.

51. Heterocyclic rings contain atoms other than carbon, e.g. pyridine (N), furan (O), and:

(A) only cyclopropane
(B) only methane
(C) thiophene (S)
(D) only NaCl

Correct Answer: C

Explanation: N, O, or S in the ring — so “thiophene (S)” is the matching option.

52. A functional group is an atom or group that gives a family its:

(A) nuclear binding energy
(B) air composition percent
(C) pH of distilled water only
(D) characteristic chemical (and physical) properties

Correct Answer: D

Explanation: It is the reactive site — so “characteristic chemical (and physical) properties” is the matching option.

53. Functional groups are used to name compounds, classify series, and mark:

(A) sites of chemical reactivity
(B) the 78% nitrogen in air
(C) melting point of ice only
(D) AQI colours

Correct Answer: A

Explanation: Synthesis targets the functional group — so “sites of chemical re.

54. Alkanes as a class are listed with functional group:

(A) C=C

(B) none (just C–C and C–H)
(C) C≡C
(D) COOH

Correct Answer: B

Explanation: No extra heteroatom group — so “none (just C–C and C–H)” is the matching option.

55. The alkene functional feature is:

(A) OH on an alkyl carbon only
(B) NH2
(C) C=C
(D) CHO

Correct Answer: C

Explanation: The double bond — so “C=C” is the matching option.

56. The alkyne functional feature is:

(A) C=O of ketones only
(B) COOR
(C) C6H5OH
(D) C≡C

Correct Answer: D

Explanation: The triple bond — so “C≡C” is the matching option.

57. Alcohols have —OH attached to:

(A) an alkyl carbon (R–OH)
(B) a benzene ring (that would be phenol)
(C) two alkyls on the same O (ether)
(D) a carboxyl carbon as the only definition of alcohol

Correct Answer: A

Explanation: Alcohols have —OH attached to an alkyl carbon (R–OH).

58. Ethers have oxygen attached to:

(A) one H and one alkyl only (alcohol)
(B) two alkyl (or carbon) groups, C–O–C
(C) a benzene ring as phenol
(D) a carbonyl H as aldehyde

Correct Answer: B

Explanation: R–O–R′ — so “two alkyl (or carbon) groups, C–O–C” is the matching option.

59. Haloalkanes replace one alkane hydrogen by a:

(A) sodium ion
(B) noble gas
(C) halogen
(D) phosphate

Correct Answer: C

Explanation: CH3Cl, CH3Br, C2H5I, C2H5Cl — so “halogen” is the matching option.

60. Phenol is C6H5OH: —OH on a:

(A) straight pentane chain only
(B) carboxyl carbon
(C) phosphate sugar
(D) benzene ring

Correct Answer: D

Explanation: That is what distinguishes phenol from ethanol.

61. Phenol was historically the first:

(A) antiseptic used in an operating theatre

(B) alkane fuel
(C) DNA base
(D) NPK fertiliser

Correct Answer: A

Explanation: A chapter application fact — so "antiseptic used in an operating theatre" is the matching option.

62. Aldehydes and ketones both contain the:

(A) only OH of alcohols
(B) carbonyl group C=O
(C) only C≡C
(D) only NH2

Correct Answer: B

Explanation: —CO— condensed — so "carbonyl group C=O" is the matching option.

63. An aldehyde has at least one hydrogen on the:

(A) benzene para position always
(B) triple-bond carbon always
(C) carbonyl carbon
(D) sodium ion

Correct Answer: C

Explanation: —CHO — so "carbonyl carbon" is the matching option.

64. A ketone has two hydrocarbon groups on the:

(A) same oxygen as an ether always
(B) N of an amine always
(C) P of DNA only
(D) carbonyl carbon

Correct Answer: D

Explanation: RCOR' — so "carbonyl carbon" is the matching option.

65. Methanal (formaldehyde) is:

(A) HCHO
(B) CH3COCH3
(C) CH3COOH
(D) CH3NH2

Correct Answer: A

Explanation: The simplest aldehyde — so "HCHO" is the matching option.

66. Ethanal (acetaldehyde) is:

(A) CH3OCH3
(B) CH3CHO
(C) C6H5OH
(D) CH4

Correct Answer: B

Explanation: Two-carbon aldehyde — so "CH3CHO" is the matching option.

67. Propanone (acetone) is:

(A) HCHO
(B) CH3CH2OH
(C) CH3COCH3
(D) HCOOH

Correct Answer: C

Explanation: The simplest common ketone — so "CH3COCH3" is the matching option.

68. The carboxyl group is:

(A) only C=O with two alkyls (ketone)

(B) only C–O–C
(C) only NH2
(D) —COOH (carbonyl + OH on the same carbon)

Correct Answer: D

Explanation: That is the acid functional group — so "—COOH (carbonyl + OH on the same carbon)" is the matching option.

69. Methanoic (formic) acid is HCOOH; ethanoic (acetic) acid is:

(A) CH3COOH
(B) CH3CHO
(C) CH3COCH3
(D) CH3OCH3

Correct Answer: A

Explanation: Vinegar acid — so "CH3COOH" is the matching option.

70. Esters have general pattern:

(A) RNH2
(B) RCOOR′
(C) ROH only
(D) RH alkane

Correct Answer: B

Explanation: Acid derivative with —COOR' — so "RCOOR'" is the matching option.

71. Methyl ethanoate is an ester example:

(A) CH3COOH
(B) CH3CHO
(C) CH3COOCH3
(D) CH3NH2

Correct Answer: C

Explanation: Acetate ester — so "CH3COOCH3" is the matching option.

72. Amides have:

(A) ROR′
(B) Ar–OH only
(C) CnH2n+2
(D) RCONH2

Correct Answer: D

Explanation: Carbonyl attached to nitrogen — so "RCONH2" is the matching option.

73. Ethanamide is:

(A) CH3CONH2
(B) CH3CH2NH2
(C) CH3COOH
(D) CH3CHO

Correct Answer: A

Explanation: Two-carbon amide — so "CH3CONH2" is the matching option.

74. Amines have functional group:

(A) —COOH
(B) —NH2 (RNH2 at this level)
(C) —CHO
(D) —OH on benzene only

Correct Answer: B

Explanation: Methylamine CH3NH2, ethylamine C2H5NH2 — so "—NH2 (RNH2 at this level)" is the matching option.

75. If carbonyl C has H attached, classify as:

(A) ketone
(B) carboxylic acid
(C) aldehyde
(D) alkane

Correct Answer: C

Explanation: Rule from the problem-solving strategy — so "aldehyde" is the matching option.

76. If carbonyl C has OH attached, classify as:

(A) ketone
(B) ether
(C) alkyne
(D) carboxylic acid

Correct Answer: D

Explanation: Carboxyl — so "carboxylic acid" is the matching option.

77. If carbonyl C sits between two carbons, classify as:

(A) ketone
(B) aldehyde
(C) amine
(D) haloalkane

Correct Answer: A

Explanation: RCOR' — so "ketone" is the matching option.

78. Diethyl ether CH3CH2OCH2CH3 is an ether once used as an anaesthetic but limited because it is:

(A) a strong solid salt like NaCl
(B) inflammable and causes nausea
(C) identical to phenol
(D) a nucleic acid

Correct Answer: B

Explanation: Safety and side effects — so "inflammable and causes nausea" is the matching option.

79. Methanol is poisonous internally and can cause:

(A) only pleasant intoxication like safe ethanol always
(B) only blue CuSO4 colour
(C) blindness or death
(D) only extra dissolved oxygen

Correct Answer: C

Explanation: Do not drink wood alcohol — so "blindness or death" is the matching option.

80. Acetone is a common solvent for fats, rubber, plastics, and:

(A) only aqueous NaCl always
(B) only DNA extraction salt always
(C) only NPK
(D) varnishes

Correct Answer: D

Explanation: A polar organic ketone solvent — so "varnishes" is the matching option.

B. Less Important / Secondary Topics

81. An alkyl radical has:

(A) one fewer hydrogen than its parent alkane
(B) one extra oxygen always
(C) a benzene ring always
(D) a peptide bond

Correct Answer: A

Explanation: Do-you-know box: CH3 from CH4 — so "one fewer hydrogen than its parent alkane" is the matching option.

82. Organic compounds rarely contain:

(A) carbon
(B) metal atoms
(C) hydrogen
(D) oxygen in derivatives

Correct Answer: B

Explanation: Organometallics are not the Grade 9 core.

83. Plastics, rubber, fibres, paints, glues, drugs, dyes, soaps, and detergents illustrate:

(A) noble gases
(B) dry-air composition
(C) industrial organic products
(D) NPK letters

Correct Answer: C

Explanation: Everyday carbon compounds — so "industrial organic products" is the matching option.

84. Coal, oil, and natural gas are listed as:

(A) inorganic carbonates
(B) DNA bases
(C) catalytic metals
(D) organic energy sources

Correct Answer: D

Explanation: Fossil carbon — so "organic energy sources" is the matching option.

85. Decane in the alkane table is:

(A) C10H22
(B) C10H20 as the open alkane
(C) C10H10
(D) CH4

Correct Answer: A

Explanation: n = 10 — so "C10H22" is the matching option.

86. Heptane is C7H16; nonane is:

(A) C9H18 as the open alkane
(B) C9H20
(C) C9H8
(D) C9H9OH

Correct Answer: B

Explanation: Keep 2n+2 — so "C9H20" is the matching option.

87. CH2=CH–CH=CH2 in the saturation exercise is:

(A) an alkane
(B) CO2
(C) unsaturated (two double bonds)
(D) an amine

Correct Answer: C

Explanation: A diene — so "unsaturated (two double bonds)" is the matching option.

88. Carbocyclic means the ring atoms are:

(A) must include nitrogen
(B) must include sulphur
(C) must include oxygen

(D) all carbon (homocyclic)

Correct Answer: D

Explanation: Contrast with heterocyclic — so “all carbon (homocyclic)” is the matching option.

89. Pyridine is a six-membered ring with:

(A) nitrogen in the ring
(B) only CH2 vertices like cyclohexane
(C) a carboxyl group as the ring atom
(D) a peptide link

Correct Answer: A

Explanation: Heteroaromatic N — so “nitrogen in the ring” is the matching option.

90. Furan has oxygen in a:

(A) six-membered benzene
(B) five-membered ring
(C) protein helix
(D) DNA double strand

Correct Answer: B

Explanation: O-heterocycle — so “five-membered ring” is the matching option.

91. Thiophene has:

(A) only an alcohol OH on pentane
(B) only an ester
(C) sulphur in a five-membered ring
(D) only methane

Correct Answer: C

Explanation: S-heterocycle — so “sulphur in a five-membered ring” is the matching option.

92. CH3CH2CH2OH is an alcohol; C6H5OH is a:

(A) ether
(B) alkane
(C) alkyne
(D) phenol

Correct Answer: D

Explanation: OH on alkyl vs OH on benzene — so “phenol” is the matching option.

93. CH3CH2OCH2CH3 is classified as an:

(A) ether
(B) alcohol
(C) carboxylic acid
(D) amine

Correct Answer: A

Explanation: Oxygen between two ethyls — so “ether” is the matching option.

94. Iodoethane is a haloalkane example:

(A) CH3OH
(B) CH3CH2I
(C) CH3CHO
(D) CH3COOH

Correct Answer: B

Explanation: Iodine on two-carbon chain — so “CH3CH2I” is the matching option.

95. Butanone is a ketone:

(A) HCHO
(B) CH3NH2
(C) CH3COCH2CH3

(D) CH3Cl

Correct Answer: C

Explanation: Four-carbon ketone — so "CH3COCH2CH3" is the matching option.

96. Ethyl ethanoate is:

(A) CH3CH2OH
(B) CH3CH3
(C) C6H6
(D) CH3COOCH2CH3

Correct Answer: D

Explanation: Ethyl acetate ester — so "CH3COOCH2CH3" is the matching option.

97. Propionaldehyde CH3CH2CHO is noted for a:

(A) foul irritating odour
(B) sweet antiseptic phenol smell as the main fact
(C) being an alkane fuel
(D) being NPK

Correct Answer: A

Explanation: Propionaldehyde CH3CH2CHO is noted for a foul irritating odour.

98. HCHO is used toward polymers such as urotropine for:

(A) catalytic converters
(B) urinary-tract treatment context in the exercise
(C) acid rain
(D) eutrophication

Correct Answer: B

Explanation: HCHO is used toward polymers such as urotropine for urinary-tract treatment context in the exercise.

99. CH3COCH3 is used in:

(A) making haemoglobin
(B) chlorinating water
(C) nail-polish remover
(D) Paris Agreement targets

Correct Answer: C

Explanation: Acetone solvent use — so "nail-polish remover" is the matching option.

100. Ethanol CH3CH2OH is used in plastics, cosmetics, and:

(A) only as a DNA base
(B) only as NOx catalyst
(C) only as anhydrous CuSO4
(D) tinctures

Correct Answer: D

Explanation: A versatile alcohol — so "tinctures" is the matching option.

101. Vinyl chloride CH2=CHCl is:

(A) unsaturated (has C=C)
(B) a saturated alkane
(C) CO2
(D) an inorganic carbonate

Correct Answer: A

Explanation: PVC monomer — so "unsaturated (has C=C)" is the matching option.

102. PVC uses listed include vinyl sheets, drainage pipes, and:

(A) edible protein
(B) wire insulation
(C) NPK fertiliser

(D) catalytic rhodium

Correct Answer: B

Explanation: Polymer applications — so "wire insulation" is the matching option.

103. Aspirin is made from salicylic acid, which has a benzene ring with:

(A) only an alkane chain
(B) only a triple bond
(C) —COOH and —OH next to each other
(D) only an amine

Correct Answer: C

Explanation: Aspirin is made from salicylic acid, which has a benzene ring with —COOH and —OH next to each other.

104. Water adding to ethene gives ethanol, converting:

(A) an acid into an ester only
(B) an amine into an amide only
(C) DNA into RNA
(D) C=C into an alcohol —OH

Correct Answer: D

Explanation: Functional-group interconversion — so "C=C into an alcohol —OH" is the matching option.

105. A two-carbon alcohol example to sketch is:

(A) ethanol, CH3CH2OH
(B) methane
(C) benzene
(D) glucose polymer only

Correct Answer: A

Explanation: Simplest common alcohol with two carbons.

106. A two-carbon aldehyde is:

(A) acetone
(B) ethanal, CH3CHO
(C) acetic acid
(D) dimethyl ether

Correct Answer: B

Explanation: —CHO on C2 — so "ethanal, CH3CHO" is the matching option.

107. A two-carbon carboxylic acid is:

(A) methane
(B) ethene
(C) ethanoic acid, CH3COOH
(D) phenol

Correct Answer: C

Explanation: Acetic acid — so "ethanoic acid, CH3COOH" is the matching option.

108. A two-carbon alkene is:

(A) ethane
(B) ethyne only as the only C2 unsaturation
(C) ethanol
(D) ethene, CH2=CH2

Correct Answer: D

Explanation: The polymer monomer — so "ethene, CH2=CH2" is the matching option.