

Name:
Number:
Group:



Umm Al-Qura University
Faculty of Applied Science
Chemistry Department



Organic Chemistry
402230-4

1- Put (✓) or (X) in front of the following sentences

Organic compounds use mostly ionic bonding	(X)
Organic compounds use mostly covalent bonding	(✓)
Organic compounds mostly insoluble in water	(✓)
Organic compounds mostly soluble in water	(X)
C atom always has three bonds	(X)
C atom always has four bonds	(✓)
Electronegativity is the ability of an atom to attract electrons to itself	(✓)
Reduction of alkyl halide give alcohols	(X)
Alkanes are called paraffins	(✓)
Alkanes are unsaturated compounds	(X)
Hydrolysis of Grignard Reagents produce alkanes	(✓)
Wurtz reaction used for preparation of alkenes	(X)
Kolb's synthesis used for preparation of alkanes	(✓)
Oxidations of alkanes give CO ₂ and water	(✓)
Alkenes are called olefins	(✓)
Alkenes are unsaturated compounds	(✓)
Alkyl halides are water soluble	(X)
Amines are polar compounds	(✓)
Reduction of amides, oximes, hydrazones give amines	(✓)
Azo dyes compounds can be prepared from aromatic amines	(✓)
Nitrous acid can be used in differentiation between amines	(✓)
Hydrolysis of alkyl halides give alcohols	(✓)
Oxidation of primary alcohols give ketones	(X)
Oxidation of secondary alcohols give Acids	(✓)
Oxidation of tertiary alcohols give No reaction	(✓)

2- Choose the correct answer from the brackets

1) C atom consists of

- a) 4 single b) 1 double and 2 single c) 1 triple and 1 single d) All the answers

2) O atom consists of

- a) 4 single b) 1 double and 1 single c) 1 double d) All the answers

3) N atom consists of

- a) 3 single b) 1 double and 1 single c) 1 triple d) All the answers

4) Types of bonds in organic compounds

- a) Ionic bonds b) Covalent bonds c) Hydrogen bonds b) All the answers

5) Double bond (=) has

- a) 1 σ + 1 π bond b) 1 π and 1 π bond c) 2 σ bond b) All the answers

6) Triple bond (\equiv) has

- a) 2 σ + 1 π bond b) 2 π and 1 σ bond c) 3 σ bond b) All the answers

7) Sp^3 –Hybridization for

- a) C-C bond b) C-H bond c) $C\equiv C$ bond b) $C=C$

8) Sp^2 –Hybridization for

- a) C-C bond b) C-H bond c) $C\equiv C$ bond b) $C=C$ bond

9) Sp –Hybridization for

- a) C-C bond b) C-H bond c) $C\equiv C$ bond b) $C=C$ bond

10) Type of hybridization for $HC\equiv CH$

- a) SP b) Sp^2 c) Sp^3 b) Sp , Sp^2

11) Type of hybridization for $H_2C=CH_2$

- a) SP b) Sp^2 c) Sp^3 b) Sp , Sp^2

12) Type of hybridization for CH_3-CH_3

- a) SP b) Sp^2 c) Sp^3 b) Sp , Sp^2

13) The angel of Sp^3 -hybridization is

- a) 109 °A b) 180 °A c) 120 °A d) No answer

14) The angel of Sp^2 -hybridization is

- 15) 109 °A b) 180 °A c) 120 °A d) No answer

16) The angel of Sp -hybridization is

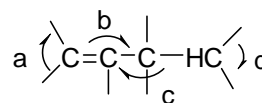
- 17) 109 °A b) 180 °A c) 120 °A d) No answer

18) How many orbit resulting from overlapping three orbital's of p with one of s orbital

- a) 1 orbital b) 2 orbital's c) 3 orbital's d) 4 orbital's

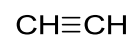
19) The angel 120 ° in this structure

- a) a, c b) a, b c) a, d d) a, b, d



20) The number of electrons of (π) bonds in this structure

- a) 6 electrons b) 8 electrons c) 10 electrons d) 12 electrons



21) Hybridization of two orbits of p with one of s orbital formation of

- a) SP b) Sp² c) Sp³ b) Sp , Sp²

22) How many molecular orbital's in the following compound $\text{HC} \equiv \text{C}-\text{CH}_3$

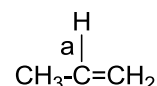
- a) 6 electrons b) 8 electrons c) 10 electrons d) 16 electrons

23) Type of hybridization of the carbon atoms in $\text{CH}_3-\text{N}=\text{C}=\text{O}$

- a) SP-SP³ b) SP³-SP² **c) SP³-SP** d) SP²-SP

24) Bond (a) indicated in term of orbital overlap

- a) S-SP b) SP³-S c) SP²-S d) SP²-SP



25) The empirical formula of compound contain 5C`s, 12H`s , 5O`s

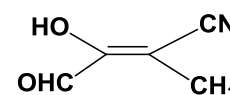
- a) C₅H₁₂O₅ b) C₁₀H₂₀O₁₀ c) CH₅O d) C₂H₅O₂

26) Type of the isomerism between the two compounds CH_3-CH_3 , $\text{CH}_2=\text{CH}_2$

- a) Skeletal b) Functional c) Positional d) No isomer

27) The stereoisomer of this structure

- a) Cis b) Trans c) Z d) E



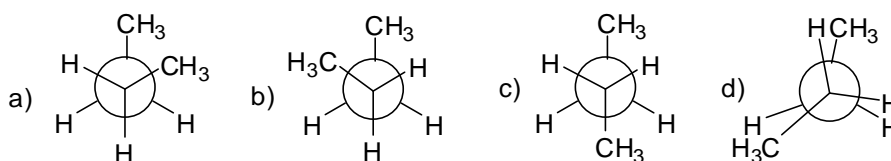
28) Which one of the following conformation is the most stable

- a) Eclipsed b) Anti c) Gauche d) All the answer

29) Which one of the following conformation is the most stable

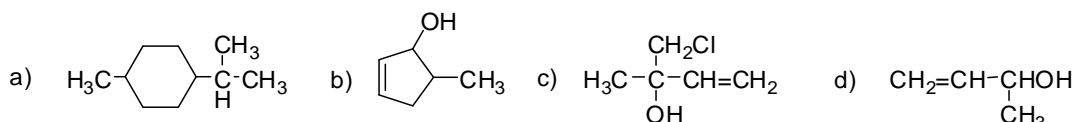
- a) Anti b) Chair c) Equatorial d) All the answer

30) Which one of the following structures is the most stable conformation



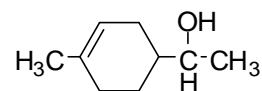
- a) a b) b c) c d) d

31) Which of the following molecules is chiral molecule (لا يوجد ذرة كيرالية)



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

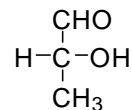
32) The number of isomers for this structure



- a) 2 b) 4 c) 9 d) No isomer

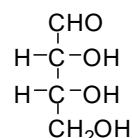
33) The type of isomer for this structure

- a) Z b) E c) R d) S

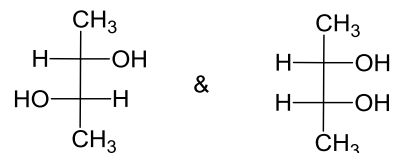


34) The type of isomer for this structure

- a) R, S b) R,R c) S,R d) S,S



35) The relationship between the two structures is



- a) Enantiomers b) Identical c) Diastereoisomer d) No isomer

36) The function group of acids

- a) CHO b) CO c) OH d) COOH

37) The function group of aldehydes

- a) CHO b) CO c) OH d) COOH

38) The function group of ketones

- a) CHO b) CO c) OH d) COOH

39) The function group of Esters

- a) CHO b) CO c) OH d) -COO-

40) The function group of Ethers

- a) CHO b) CO c) -O- d) COOH

41) The function group of Amines

- a) NH₂ b) -NH- c) -N= d) All the answer

42) The function group of Acid chlorides

- a) -CONH₂ b) -COCl c) -CO--O-CO- d) -COO-

43) The function group of Anhydrides

- a) -CONH₂ b) -COCl c) -CO--O-CO- d) -COO-

44) The function group of Amides

- a) -CONH_2 b) -COCl c) -CO--O-CO- d) -COO-

45) The Alkanes are

- a) Acetylenes b) Olefines c) Parrafines d) No answer

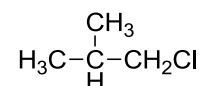
46) The Alkenes are

- a) Acetylenes b) Olefines c) Parrafines d) No answer

47) The Alkynes are

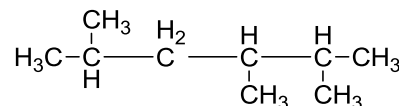
- a) Acetylenes b) Olefines c) Parrafines d) No answer

48) The Name of compound



- a) tert-butylchloride b) iso-butylchloride c) n-propylchloride d) sec-butylchloride

49) The Name of compound



- a) 2,4,5-trimethylpentane b) 2,3,5-trimethylhexane c) 2,3,5-Dimethylhexane
d) 2.4.5-trimethyl heptane

50) The Name of compound



- a) cycloheptane b) cyclobutane c) cyclohexane d) cyclopentane

51) The product of this equation $2 \text{CH}_3\text{CH}_2\text{Br} + 2\text{Na} \longrightarrow$

- a) $\text{CH}_3\text{CH}_2\text{CH}_3$ b) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3$ c) $\text{CH}_2=\text{CH}_2$ d) $\text{HC}\equiv\text{CH}$

52) The product of this equation $\text{C}_5\text{H}_{12} + 8\text{O}_2 \longrightarrow$

- a) $\text{CO}_2 + 2\text{H}_2\text{O}$ b) $\text{CO} + 6\text{H}_2\text{O}$ c) $5\text{CO}_2 + 6\text{H}_2\text{O}$ d) No Answer

53) The acetylene name is called for

- a) Alkene b) Alkane c) Alkynes d) No answer

54) The Molecular formula of alkanes

- a) $\text{C}_n\text{H}_{2n+2}$ b) C_nH_{2n} c) $\text{C}_n\text{H}_{2n-2}$ d) No answer

55) The Molecular formula of alkenes

- a) $\text{C}_n\text{H}_{2n+2}$ b) C_nH_{2n} c) $\text{C}_n\text{H}_{2n-2}$ d) No answer

56) The Molecular formula of alkynes

- a) C_nH_{2n+2} b) C_nH_{2n} c) C_nH_{2n-2} d) No answer


57) The Name of compound $CH_3CH_2CH=CH_2$

- a) α -butane b) β -butene c) 2-butane d) 1-pentene

58) The Name of compound $CH_3CH=CHCH_2$

- a) α -butane b) β -butene c) 3-butane d) 2-pentene

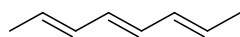
59) The Name of compound 1,3-cyclohexadiene

- a)  b)  c)  d) 

60) The Name of compound 1,4-cyclohexadiene

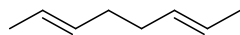
- a)  b)  c)  d) 

61) The type of Dienes



- a) Isolated b) Conjugated c) Cumulated d) All answer

62) The type of Dienes



- a) Isolated b) Conjugated c) Cumulated d) All answer

63) This reaction give $CH_3CH_2Cl + alc.KOH \longrightarrow$

- a) CH_3CH_3 b) $CH_2=CH_2$ c) CH_3CH_2OH d) No answer

64) This reaction give $CH_3CH_2Cl + aq.KOH \longrightarrow$

- a) CH_3CH_3 b) $CH_2=CH_2$ c) CH_3CH_2OH d) No answer

65) This reaction give $CH_3CH_2OH + H_2SO_4 \longrightarrow$

- a) CH_3CH_3 b) $CH_2=CH_2$ c) CH_3CH_2OH d) No answer

66) This reaction give $CH_3CH=CH_2 + O_3 \longrightarrow$

- a) $CH_3CHO + HCHO$ b) $HCHO + HCHO$ c) $CH_3CHO + CH_3CHO$ d) No answer

67) This reaction give $CH_3CH=CH_2 + HBr \longrightarrow$

- a) $CH_3CH_2CH_2Br$ b) $CH_3CH(Br)CH_3$ c) CH_3CH_2OH d) No answer

68) This reaction give $CH_3CH=CH_2 + H_2O \longrightarrow$

- a) $CH_3CH_2CH_2OH$ b) $CH_3CH(OH)CH_3$ c) CH_3CH_2OH d) No answer

69) This reaction give $\text{CH}_3\text{OH} + \text{HCl} \longrightarrow$

- a) CH_4 b) CH_3CH_3 c) CH_3Cl d) No answer

70) This reaction give $\text{CH}_3\text{CH}_2\text{OH} + \text{PCl}_5 \longrightarrow$

- a) $\text{CH}_2=\text{CH}_2$ b) $\text{CH}_3\text{CH}_2\text{Cl}$ c) $\text{CH}\equiv\text{CH}$ d) No answer

71) Reduction of alkyl halides give

- a) Alkanes b) Alkenes c) alcohols d) No Answer

72) Williamson Reaction for preparation of

- a) Alkanes b) alcohols c) ethers d) No Answer

73) This reaction give $\text{CH}_2\text{Cl}_2 + 2\text{KOH} \longrightarrow$

- a) CH_3CHO b) $\text{CH}\equiv\text{CH}$ c) HCHO d) No answer

74) This reaction give $\text{CH}_3\text{CHCl}_2 + 2\text{KOH} \longrightarrow$

- a) CH_3CHO b) $\text{CH}\equiv\text{CH}$ c) HCHO d) No answer

75) This reaction give $\text{ClCH}_2\text{CH}_2\text{Cl} + 2\text{KOH} \longrightarrow$

- a) CH_3CHO b) $\text{CH}\equiv\text{CH}$ c) HCHO d) No answer

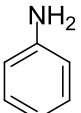
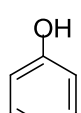
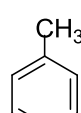
76) This reaction give $\text{CHCl}_3 + 3\text{KOH} \longrightarrow$

- b) CH_3CHO b) $\text{CH}\equiv\text{CH}$ c) HCOOH d) No answer

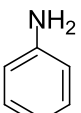
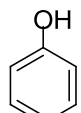
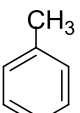
77) Which of this compounds is secondary amine

- a) CH_3NH_2 b) CH_3NHCH_3 c) $\text{N}(\text{CH}_3)_3$ d) No answer

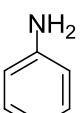
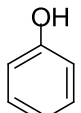
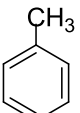
78) Which of this compounds is aniline

- a)  b)  c)  d) No answer

79) Which of this compounds is Toluene

- a)  b)  c)  d) No answer

80) Which of this compounds is Phenol

- a)  b)  c)  d) No answer

81) Hoffman alkylation for preparation of

- a) Alkyl halides b) alkanes c) amines d) No answer

82) Amines can be prepared by

- a) Kolb's synthesis b) Williamson c) Gabriel synthesis d) No answer

83) To differentiate between amines can be used

- a) Hinsburg test b) Azo dye test c) Wurtz reaction d) No answer

84) Which of these compounds is tertiary alcohol

- a) $\text{H}_3\text{C}-\overset{\text{CH}_3}{\underset{\text{OH}}{\text{C}}}-\text{CH}_3$ b) $\text{H}_3\text{C}-\overset{\text{H}}{\underset{\text{OH}}{\text{C}}}-\text{CH}_3$ c) $\text{CH}_3\text{CH}_2\text{OH}$ d) No Answer

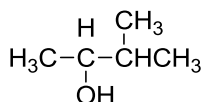
85) The structure of n-butyl alcohol is

- a) $\text{H}_3\text{C}-\overset{\text{CH}_3}{\underset{\text{OH}}{\text{C}}}-\text{CH}_3$ b) $\text{H}_3\text{C}-\overset{\text{H}}{\underset{\text{OH}}{\text{C}}}-\text{CH}_2\text{CH}_3$ c) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$ d) No Answer

86) The structure of sec-butyl alcohol is

- a) $\text{H}_3\text{C}-\overset{\text{CH}_3}{\underset{\text{OH}}{\text{C}}}-\text{CH}_3$ b) $\text{H}_3\text{C}-\overset{\text{H}}{\underset{\text{OH}}{\text{C}}}-\text{CH}_2\text{CH}_3$ c) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$ d) No Answer

87) The name of the compound



is

- a) 2-methyl-3-butanol b) 3-methyl-2-butanol c) 2-pentanol d) No answer

88) The name of the compound $\text{HOCH}_2\text{CH}_2\text{OH}$ is

- a) Ethanol b) 1,2-ethandiol c) 1,2-ethanol d) No answer

89) The name of the compound Ethylene glycol is

- a) $\text{CH}_3\text{CH}_2\text{OH}$ b) $\text{HOCH}_2\text{CH}_2\text{OH}$ c) $\text{CH}_2=\text{CH}_2$ d) No answer

90) This reaction gives $\text{CH}_3\text{OH} + \text{HCl} \longrightarrow$

- b) CH_4 b) CH_3Cl c) HCHO d) No answer

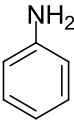
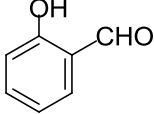
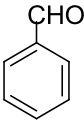
91) This reaction gives $2\text{CH}_3\text{OH} + \text{H}_2\text{SO}_4 \longrightarrow$

- c) CH_3CH_3 b) CH_3OCH_3 c) HCHO d) No answer

92) Can be differentiated between alcohols by

- a) Reduction b) Oxidation c) Hinsburg reaction d) No answer

93) Which of these compounds is benzaldehyde

- a)  b)  c)  d) No answer

94) The name of the compound HCHO is

- a) Formaldehyde b) Acetaldehyde c) Acetone d) No answer

95) The name of the compound CH_3CHO is

- a) Formaldehyde b) Acetaldehyde c) Acetone d) No answer

96) The name of the compound CH_3COCH_3 is

- a) Formaldehyde b) Acetaldehyde c) Acetone d) No answer

97) The name of the compound $\text{CH}_3\text{CH}_2\text{CH}_2\text{CHO}$ is

- a) butanol b) butanal c) butanone d) No answer

98) The name of the compound $\text{CH}_3\text{CH}_2\text{COCH}_3$ is

- a) butanol b) butanal c) butanone d) No answer

99) Reduction of aldehydes give

- a) Primary alcohols b) secondary alcohols c) tertiary alcohols d) No answer

100) Reduction of Ketones give

- a) Primary alcohols b) Secondary alcohols c) tertiary alcohols d) No answer

101) Clemmenson reduction for ketones give

- a) Alkenes b) Alkanes c) Alcohols d) No answer

102) Reaction of Grignard reagent with formaldehyde give

- a) $^{\circ}1$ alcohols b) $^{\circ}2$ alcohols c) $^{\circ}3$ alcohols d) No answer

103) Reaction of Grignard reagent with acetaldehyde give

- a) $^{\circ}1$ alcohols b) $^{\circ}2$ alcohols c) $^{\circ}3$ alcohols d) No answer

104) Reaction of Grignard reagent with Acetone give

- a) $^{\circ}1$ alcohols b) $^{\circ}2$ alcohols c) $^{\circ}3$ alcohols d) No answer

105) This reaction give $\text{CH}_3\text{CHO} + \text{CH}_3\text{MgBr} \longrightarrow$

- a) $\text{CH}_3\text{CH}_2\text{OH}$ b) $\text{CH}_3\text{CH}(\text{OH})\text{CH}_3$ c) CH_3COCH_3 d) No answer

106) The name of the compound CH_3COOH is

- a) Acetaldehyde b) Acetic acid c) Acetone d) No answer

107) The name of the compound $\text{CH}_3\text{CH}_2\text{COOH}$ is

- a) Propanol b) Propanoic acid c) Propanal d) No answer

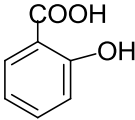
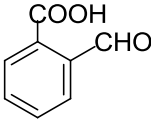
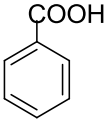
108) This reaction give $\text{CO}_2 + \text{CH}_3\text{MgBr} \longrightarrow$

- a) CH_3COOH b) CH_3CHO c) CH_3COCH_3 d) No answer

109) This reaction give $\text{CH}_3\text{COOH} + \text{PCl}_5 \longrightarrow$

- a) CH_3COCl b) $\text{CH}_3\text{CH}_2\text{Cl}$ c) $\text{CH}_3\text{CH}(\text{Cl})\text{CH}_3$ d) No answer

110) Which of this compounds is benzoic acid

- a)  b)  c)  d) No answer