CHEMISTRY WORK SHEET FOR GRADE-11STUDENTS(2018 E.C)

CHOOSE THE BEST ANSWER AMONG THE GIVEN ALTERNATIVE AND JUSTIFY YOUR ANSWER WITH EVIDENCES.

1. Chemical kinetics is the study of: A. heat changes in reactions
B. reaction rates and factors affecting them C. chemical equilibrium only D. atomic structure
2. The rate of a chemical reaction refers to: A. amount of catalyst used
B. change in concentration per unit time C. temperature change D. total mass of reactants
3. Which of the following reactions is usually very fast? A. rusting of iron
B. fermentation C. explosion of gunpowder D. formation of petroleum
4. Which factor does NOT affect reaction rate? A. temperature B. catalyst C. concentration
D. color of container
5. Increasing temperature generally: A. decreases reaction rate B. increases reaction rate
C. stops the reaction D. has no effect
6. A catalyst works by: A. increasing activation energy B. decreasing activation energy
C. increasing reactant mass D. stopping collisions
7. The minimum energy needed for a reaction to occur is called: E a A. kinetic energy
B. activation energy C. potential energy D. heat energy Answer: B
8. Which condition increases collision frequency? A. lower concentration
B. smaller surface area C. higher concentration D. lower temperature Answer: C
9. According to collision theory, reacting particles must: A. be colored B. collide effectively
C. move slowly D. lose energy Answer: B
10. A catalyst is: A. consumed in the reaction B. unchanged after reaction C. a reactant
D. always a liquid Answer: B
11. Powdered calcium carbonate reacts faster than marble chips because it has: A. lower density . B. higher temperature C. larger surface area D. smaller mass Answer: C

12. Which reaction condition gives the slowest rate? A. low temperature and low concentration B.high temperature and high concentration C. catalyst present D. powdered reactant used

13. Enzymes are examples of: A. reactants B. products C. biological catalysts D. acids

14. The unit of reaction rate is commonly: A. mol B.S C. mol/L/s D. g

15. Which statement is true about catalysts? A. they change equilibrium position B. they are used up C. they speed up reactions D. they decrease collisions

16. Increasing pressure increases the rate of reactions involving: A. solids only B. liquids only C. gases D. catalysts

17. Which factor affects reaction rate by increasing kinetic energy? A. pressure B. catalyst C. temperature D. concentration

18. The rusting of iron is an example of: A. fast reaction B. slow reaction C. explosive reaction D. reversible reaction

19. Which of the following increases surface area? A. heating B. grinding solids C. adding water D. decreasing pressure

20. The rate of reaction decreases as reactants are used because: A. concentration decreases B. activation energy increases C. products disappear D. catalysts stop working

21. Effective collisions occur when particles: A. collide with sufficient energy B. move slowly C. have no energy D. avoid contact

22. Which graph best represents a fast reaction? A. slow concentration change B. steep concentration curve C. horizontal line D. constant temperature line

23. Which factor has no effect on the rate of dissolving sugar in water? A. stirring B. particle size C. temperature D. color of sugar

24. A reaction with low activation energy is usually: A. slow B. fast C. impossible D. reversible only

25. Catalysts are important in industries because they: A. reduce reaction rate B. lower production efficiency C. speed up reactions economically D. increase waste

26. The decomposition of hydrogen peroxide is faster in the presence of manganese(IV) oxide .... because MnO_2 acts as: A. reactant B. product C. catalyst D. inhibitor

27. Which one increases the rate of burning charcoal? A. decreasing oxygen supply B. cooling the charcoal C. increasing oxygen supply D. adding water

28. In collision theory, particles must collide with correct: A. shape and orientation B. color and mass C. size only D. volume only

29. The reaction between acids and metals becomes faster when: A. acid concentration increases .. B. temperature decreases C. metal size increases greatly D. pressure decreases

30. Which statement about activation energy is correct? A. it is always zero B. catalysts lower it . .. C. it stops reactions completely D. it is not related to rate
31. Which condition produces the greatest number of effective collisions? A. low temperature
B. high temperature C. low concentration D. large solid pieces
32. The speed of food spoilage can be reduced by: A. heating strongly B. increasing temperature .. C. refrigeration D. adding oxygen
33. A catalyst affects: A. reaction pathway B. product amount only C. mass of reactants
D. equilibrium constant
34. Which reaction rate factor is most important in photosynthesis? A. light intensity
B. color of leaves C. pressure D. volume
35. Increasing concentration increases reaction rate because: A. particles collide less often
B. there are more particles per unit volume C. activation energy rises D. catalysts are formed
36. A reaction between two gases is usually fastest when: A. pressure is low
B. temperature is low C. pressure and temperature are high D. catalyst is absent
37. Which factor does a refrigerator mainly change to preserve food? A. concentration
B. surface area C. temperature D. pressure
38. The reaction between vinegar and baking soda becomes faster when: A. cooled
B. concentration increases C. water is removed D. pressure decreases
39. The collision theory explains reactions in terms of: A. electron arrangement only
B. particle collisions C. atomic mass D. periodic trends

40. Which of the following is NOT an example of a catalyst? A. enzymes
B. platinum in catalytic converters C. manganese dioxide D. oxygen in combustion
41. When zinc reacts with hydrochloric acid, hydrogen gas is produced faster if: A. zinc pieces are larger B. acid concentration is lower C. powdered zinc is used D. temperature is lowered
42. A reaction pathway with lower activation energy is called: A. alternative pathway
B. equilibrium path C. reverse path D. collision path
43. Increasing the surface area of a solid reactant: A. decreases collisions
B. increases reaction rate C. lowers concentration D. stops the reaction
44. Which factor mainly affects the rate of respiration in living organisms?

A. catalyst enzymes B. paint color C. magnetic field D. pressure only

45. Catalytic converters in cars help to: A. increase fuel use B. slow combustion C. reduce harmful gases D. produce smoke

46. Which reaction condition leads to the highest reaction rate?A.low concentration and low temperature B. high concentration and high temperature C.large solid particles D.no catalyst present

47. The reaction between sodium and water is: A. very slow B. moderate C. fast D. impossible

48. Which factor is especially important for reactions involving solids? A. pressure B. surface area C. wavelength D. density

49. Inhibitors are substances that: A. speed up reactions B. stop collisions completely C. slow down reactions D. increase activation energy permanently

50. The best explanation for faster reactions at higher temperatures is: $KE \propto T$ A. particles move slower B. fewer collisions occur C. particles have greater kinetic energy .. D. catalysts are formed automatically

51. Chemical equilibrium is reached when: A. Reactants are completely used up B. Products stop forming C. Forward and backward reaction rates become equal D. Temperature becomes zero

52 . At equilibrium, the concentration of reactants: A. Becomes zero B. Continues changing C. Remains constant D. Doubles

53 . In a reversible reaction, the backward reaction: A. Never occurs

B. Occurs only at equilibrium C. Converts products to reactants D. Stops permanently

54. Which symbol represents equilibrium? A. → B. ← C. ⇌ D. ↑

55 . Equilibrium established in a closed container is called: A. Dynamic equilibrium B. Static equilibrium C. Thermal equilibrium D. Ionic equilibrium

56 . In dynamic equilibrium: A. No reaction occurs B. Only forward reaction occurs C. Both reactions continue at equal rates D. Only backward reaction occurs

57 . Which condition is necessary for equilibrium? A. Open system B. Closed system C. High pressure only D. Low temperature only

58 . The equilibrium constant is represented by: A. Ka B. Kb C. Kc D. Kw

59. In the equilibrium expression, pure solids are: A. Included B. Excluded
C. Multiplied by zero D. Added separately

60 . Large value of KcK_cKc indicates: A. Reactants favored B. Products favored
C. No reaction D. Equal amounts always

61. Small value of KcK_cKc indicates: A. Products favored B. Reactants favored
C. Fast reaction D. No equilibrium

62 . The equilibrium constant changes with: A. Concentration B. Pressure C. Catalyst

D. Temperature

63 . A catalyst affects: A. Equilibrium position B. Value of KcK_cKc

C. Rate of reaching equilibrium D. Concentration at equilibrium

64 . Le -Chatelier's principle explains: A. Atomic structure B. Equilibrium shifts
C. Radioactivity D. Electrolysis

65 . Increasing concentration of reactants shifts equilibrium: A. Left B. Right C. Upward

D. No change

66 . Removing products shifts equilibrium: A. Left B. Right C. No effect D. Stops reaction

67 . Increasing pressure favors the side with: A. More gas moles B. Fewer gas moles
C. Equal gas moles only D. No gases

68 . Decreasing pressure favors the side with: A. Fewer gas moles B. More gas moles
C. Solids only D. Liquids only

69 . Which factor does NOT affect equilibrium position? A. Pressure B. Temperature
C. Concentration D. Catalyst

70 . Exothermic reactions release: A. Light only B. Heat C. Oxygen D. Water

71 . In an exothermic reaction, increasing temperature shifts equilibrium: A. Right B. Left
C. No change D. Upward

72 . Endothermic reactions: A. Release heat B. Absorb heat C. Produce catalysts
D. Stop at equilibrium

73 . In an endothermic reaction, increasing temperature shifts equilibrium: A. Left B. Right
C. No effect D. Downward

74 . The Haber process produces: A. Sulfuric acid B. Nitric acid C. Ammonia D.Ethanol

75 . In the Haber process, high pressure favors: A. Reactants B. Products
C. Catalyst D. Heat absorption

76 . Which catalyst is used in the Haber process? A. Platinum B. Iron C. Copper D. Zinc

77 . Equilibrium can be attained only in: A. Irreversible reactions B. Reversible reactions
C. Combustion reactions D. Nuclear reactions

78 . The unit of KcK_cKc depends on: A. Temperature only B. Pressure only
C. Reaction stoichiometry D. Catalyst used

79 . Adding more solid to a heterogeneous equilibrium: A. Changes KcK_cKc
B. Changes equilibrium position C. Has no effect D. Stops the reaction

80 . Which statement is true at equilibrium? A. Reactants equal products

B. Concentrations stop existing C. Rates are equal D. Reaction stops

81 . Which equilibrium involves gases only? A. Heterogeneous equilibrium

B. Homogeneous equilibrium C. Ionic equilibrium D. Thermal equilibrium

82 . In homogeneous equilibrium, all substances are in: A. Different phases B. Same phase
C. Solid state only D. Liquid state only

83. The equilibrium constant for gases using pressure is: A. Ka B. Kb C. Kp D. Kw

84 . If equal moles of gases are on both sides, pressure change: A. Shifts left B. Shifts right
C. Has no effect D. Stops equilibrium

85 . Which condition increases ammonia yield? A. High temperature B. Low pressure
C. High pressure D. Removing nitrogen

86 . Forward reaction rate decreases because: A. Product concentration decreases B. Reactant concentration decreases C. Temperature becomes zero D. Catalyst is removed

87 . Backward reaction rate increases because: A. Product concentration increases B. Reactant concentration increases C. Temperature decreases D. Pressure becomes zero

88. A catalyst speeds up: A. Forward reaction only B. Backward reaction only

C. Both reactions equally D. Neither reaction

89 . Which one is a heterogeneous equilibrium? A. $H_2(g)+I_2(g)\rightleftharpoons 2HI(g)$ B. $N_2(g)+3H_2(g)\rightleftharpoons 2NH_3(g)$ C. $CaCO_3(s)\rightleftharpoons CaO(s)+CO_2(g$ D. $2SO_2(g)+O_2(g)\rightleftharpoons 2SO_3(g)$

90 .If Kc >1 K_c >1Kc>1, equilibrium favors:A. Products B. Reactants C.Neither side D. Solids only

91. If Kc<1K_c <1Kc<1, equilibrium favors: A. Products B. Reactants C. Equal concentrations D. Gases only

92. Which factor changes both equilibrium position and KcK_cKc? A. Catalyst B. Pressure

C.Temperature D. Concentration

93. The contact process is used to manufacture: A. Ammonia B. Sulfuric acid C. Nitric acid D. Sodium chloride

94. In equilibrium reactions, energy changes continue because: A. Molecules keep reacting B. Reaction stops C. Temperature becomes constant D. Pressure decreases

95 . Which statement about equilibrium is false? A. It is dynamic B. It occurs in closed systems C. Reaction stops completely D. Rates become equal

96. Increasing concentration of products shifts equilibrium: A. Left B. Right C. No change D. Upward

97. The law of mass action was proposed by: A. Dalton B. Guldberg and Waage C. Rutherford D. Boyle

98. Which of the following affects gaseous equilibrium most directly? A. Pressure B. Color

C. Density only D. Shape of container

99. When equilibrium shifts right: A. More reactants form B. More products form

C. Reaction stops D. Catalyst is destroyed

100. At equilibrium, the amount of products: A. Always equals reactants

B.May be greater or smaller than reactants C.Is always zero D.Is always constant at 1 mole

101. Which reaction condition favors exothermic product formation? A. High temperature
B. Low temperature C. Low pressure only D. No catalyst

102. The value of equilibrium constant for a given reaction: A. Is always 1

B. Depends on temperature C. Depends on catalyst D. Depends on concentration Answer

103. Which process illustrates chemical equilibrium? A. Melting ice only

B.Water boiling in open air C.Saturated solution in closed container D.Burning paper

104. In the reaction $2SO_2+O_2 \rightleftharpoons 2SO_3$, increasing oxygen concentration shifts equilibrium: A. Left
B. Right C. No change D. Stops reaction

105. Which one decreases the yield of ammonia in Haber process? A. High pressure

B. Removing ammonia C. High temperature D. Adding nitrogen

106. Equilibrium involving ions in solution is called: A. Thermal equilibrium
B. Ionic equilibrium C. Nuclear equilibrium D. Physical equilibrium

107. The main idea of Le Chatelier's principle is that a system at equilibrium: A. Opposes applied changes B. Stops all reactions C. Increases temperature always
D. Removes catalysts automatically

108. Which functional group is present in alcohols? A. –CHO B. –OH C. –COOH D. –O–

109. The general formula of alcohols is: A. R–OH B. R–COOH C. R–CHO D. R–O–R

110 .Methanol contains how many carbon atoms? A. 1 B. 2 C. 3 D. 4

111.Ethanol belongs to which homologous series? A.Aldehydes B.Ketones C.Alcohols D. Esters

112. The IUPAC name of CH_3OH is: A. Ethanol B. Methanol C. Propanol D. Butanol

113.Which alcohol is used in alcoholic beverages? A.Methanol B.Ethanol C.PropanolD. Butanol

114. Alcohols are classified based on: A. Number of oxygen atoms B. Position of carbon atoms
C. Carbon attached to –OH group D. Number of hydrogen atoms

115. A primary alcohol has the –OH group attached to: A. Primary carbon B. Secondary carbon
C. Tertiary carbon D. Aromatic carbon

116. Which is a secondary alcohol? A. Methanol B. Ethanol C. Propan-2-ol D. Butan-1-ol

117. Tertiary alcohols contain the –OH group attached to:A.One carbon atom B.Two carbon atoms C. Three carbon atoms D. Four carbon atoms

118. The suffix used for naming alcohols is: A. –al B. –one C. –ol D. –oic acid

119. The molecular formula of ethanol is: A. CH_4 B. C_2H_6 C. C_2H_5OH D. C_2H_4

120. Alcohols are generally soluble in water because of: A. Ionic bonding B. Metallic bonding
C. Hydrogen bonding D. Covalent bonding

121. Boiling points of alcohols are generally: A. Lower than alkanes B. Equal to alkanes
C. Higher than alkanes D. Zero

122. Which alcohol is poisonous? A. Ethanol B. Methanol C. Glycerol D. Propanol

123. Ethanol can be prepared by: A. Fermentation B. Electrolysis
C. Neutralization D. Distillation of salt

124. The dehydration of alcohol produces: A. Alkane B. Alkene C. Ester D. Ketone

125. Oxidation of primary alcohols produces: A. Ketones B. Aldehydes C. Esters D. Ethers

126. Oxidation of secondary alcohols gives: A. Aldehydes B. Carboxylic acids C. Ketones D. Esters

127. Which reagent is commonly used to oxidize alcohols? A. NaCl B. $KMnO_4$ C. H_2O D. NaOH

128. Ethers contain the functional group: A. –OH B. –COOH C. –O– D. –CHO

129. The general formula of ethers is: A. R–OH B. R–O–R C. R–COOH D. R–CHO

130. Dimethyl ether contains: A. One oxygen atom between two methyl groups B. Two oxygen atoms C. One hydroxyl group D. One carboxyl group

131. Ethers are generally: A. More reactive than alcohols B. Less reactive than alcohols C. Ionic compounds D. Acids

132. The boiling point of ethers is generally: A. Higher than alcohols B. Lower than alcohols C. Equal to alcohols D. Extremely high

133. Aldehydes contain the functional group: A. –OH B. –COOH C. –CHO D. –O–

134. Ketones contain the functional group: A. Carbonyl group in the middle B. Hydroxyl group C. Ether linkage D. Carboxyl group

135. The suffix for aldehydes is: A. –ol B. –one C. –al D. –oic acid

136. The suffix for ketones is: A. –al B. –ol C. –one D. –yne

137. Which compound is an aldehyde? A. Propanone B. Ethanal C. Ethanol D. Ethanoic acid

138. Which compound is a ketone? A. Methanal B. Ethanal C. Propanone D. Methanol

139. Formaldehyde is another name for: A. Methanol B. Methanal C. Ethanal D. Propanal

140. Acetone is the common name for: A. Propanal B. Propanone C. Ethanol D. Ethanoic acid

141. Carboxylic acids contain the group: A. –CHO B. –OH C. –COOH D. –O

142. The suffix for carboxylic acids is: A. –ol B. –al C. –oic acid D. –one

143. Ethanoic acid is commonly called: A. Formic acid B. Acetic acid C. Citric acid D. Lactic acid

144. Vinegar mainly contains: A. Methanoic acid B. Ethanoic acid C. Propanoic acid
D. Butanoic acid

145. Carboxylic acids are acidic because they: A. Release OH^- ions B. Release H^+ ions
C. Contain oxygen D. Are ionic

146. Which is the simplest carboxylic acid? A. Ethanoic acid B. Methanoic acid
C. Propanoic acid D. Butanoic acid

147. Esters are formed from reaction between: A. Alcohol and acid B. Alkane and acid
C. Ketone and aldehyde D. Ether and alcohol

148. The process of forming esters is called: A. Oxidation B. Reduction C. Esterification
D. Fermentation

149. Esters are known for their: A.Sour taste B.Sweet smell C.Bitter taste D.High melting point

150. Which compound gives fruity smell? A. Alcohols B. Esters C. Acids D. Alkanes

151. Fats and oils are chemically: A. Proteins B. Carbohydrates C. Esters D. Alcohols

152. Fats are generally: A. Liquid at room temperature B. Solid at room temperature
C. Gases D. Acids

153. Oils are generally: A. Solid at room temperature B. Liquid at room temperature
C. Gases D. Insoluble in organic solvents

154. Hardening of oils involves: A. Oxidation B. Hydrogenation C. Fermentation D. Hydrolysis

155. Rancidity is caused by: A. Reduction B. Oxidation of oils and fats C. Neutralization
D. Hydrogenation

156. Which functional group is common in aldehydes and ketones? A. Hydroxyl
B. Carbonyl C. Carboxyl D. Ether linkage

157. Which compound belongs to alcohol family? A. CH_3COOH B. CH_3OH C. CH_3CHO
D. CH_3COCH_3

158. Which compound belongs to ether family? A. CH_3OCH_3 B. CH_3OH C. CH_3CHO
D. CH_3COOH

159. Which compound belongs to ketone family? A. CH_3CHO B. CH_3COCH_3 C. CH_3OH
D. CH_3COOH

160. Which compound belongs to aldehyde family? A. CH_3CHO B. CH_3COOH C. CH_3OH
D. CH_3OCH_3

161. Which compound belongs to carboxylic acid family? A. CH_3OH B. CH_3COOH C. CH_3CHO D. CH_3OCH_3

162. The functional group in esters is: A. –COO– B. –CHO C. –OH D. –COOH

163. Alcohols can react with carboxylic acids to produce: A. Ketones B. Aldehydes
C. Esters D. Ethers

164. The oxidation product of ethanol is: A. Methanal B. Ethanal C. Propanal D. Acetone

165. Which compound is used as antiseptic? A. Ethanol B. Methane C. Ethene D. Benzene

166. Which organic compound is used in perfumes? A. Esters B. Carboxylic acids
C. Ketones D. Aldehydes

167. The compound CH_3COOH has how many carbon atoms? mA. 1 B. 2 C. 3 D. 4

168. The IUPAC name of HCHO is: A. Methanal B. Ethanal C. Methanol D. Methanoic acid

169. The IUPAC name of CH_3COCH_3 is: A. Propanal B. Propanone C. Propanol D. Ethanal

170. The IUPAC name of CH_3COOH is: A. Methanoic acid B. Ethanoic acid
C. Propanoic acid D. Butanoic acid

171. Which compound undergoes esterification? A. Alcohol B. Carboxylic acid
C. Both A and B D. Ether

172. The major component of fats and oils is: A. Amino acids B. Triglycerides
C. Glucose D. Proteins

173. Hydrogen bonding is strongest in: A. Ethers B. Alcohols C. Alkanes D. Ketones

174. Which compound has the highest boiling point? A. Methane B. Ethane C. Ethanol

D. Dimethyl ether

175. The smell of rotten butter is due to:A. Methanoic acid B. Butanoic acid C. Ethanol

D. Acetone

176. Which is used as solvent in laboratories? A. Ether B. Sand C. Sodium chloride D. Iron

177. Aldehydes can be oxidized to form: A. Alcohols B. Ketones C. Carboxylic acids D. Ethers

178. Ketones are produced by oxidation of: A. Primary alcohols B. Secondary alcohols

C. Tertiary alcohols D. Aldehydes

179. Which compound is used in preservation of biological specimens? A. Methanal B.Ethanol

C. Ethanoic acid D. Propanol

180. The process of converting oils into fats is called: A. Hydrolysis B. Hydrogenation

C. Fermentation D. Esterification

181. Which compound contains both carbonyl and hydroxyl groups?A.Alcohol

B.Carboxylic acid C. Ether D. Ketone

182. The characteristic smell of esters makes them useful in: A. Cement production

B. Food flavoring C. Iron extraction D. Soap purification

183. The formula of ethanoic acid is: A. CH_3OH B. CH_3COOH C. CH_3CHO D. CH_3COCH_3

184. The formula of propanone is: A. CH_3CHO B. CH_3COCH_3 C. CH_3OH D. CH_3COOH

185. Which compound has the formula C_2H_5OH? A. Methanol B. Ethanol C. Propanol

D. Butanol

186. The simplest ether is: A. Diethyl ether B. Dimethyl ether C. Methoxyethane

D. Ethoxyethane

187. Organic compounds containing oxygen are called: A. Hydrocarbons

B. Oxygen-containing compounds C. Salts D. Metals

188. Which compound is used as fuel spirit? A. Ethanol B. Methanal C. Ethanoic acid

D. Acetone

189. The sour taste of vinegar is due to: A. Ethanol B. Methanol C. Ethanoic acid D. Propanone

190. Which functional group is present in ketones? A. –CO– B. –OH C. –COOH D. –O–

191. Which functional group is present in aldehydes? A. –COOH B. –CHO C. –OH D. –CO–

192. Which compound is commonly used in nail polish remover? A. Methanol B. Propanone
C. Ethanoic acid D. Ether

193. The unpleasant smell in spoiled fats is called: A. Esterification B. Rancidity
C. Hydrogenation D. Distillation

194. Which compound has the lowest molecular mass? A. Methanol B. Ethanol C. Propanol

D. Butanol

195. Which compound is an example of ester? A. Ethyl ethanoate B. Ethanol C. Ethanal
D. Ethanoic acid

196. Which of the following is NOT an alcohol? A. Methanol B. Ethanol C. Propanone

D. Butanol

197. The reaction between acid and alcohol produces water and: A. Alkane B. Ester C. Ether

D. Aldehyde

198. Which compound can form hydrogen bonds most strongly? A. Ether B. Alcohol C. Alkane

D. Ketone

199. Which compound is used in making soap and cosmetics? A. Glycerol B. Methane
C. Ethene D. Benzene

200. The hardening of vegetable oils increases their: A. Unsaturation B. Fluidity
C. Melting point D. Acidity

BY GRADE 11 CHEMISTRY TEACHERS