

# Past Papers of NET (Chemistry)

(1)

104. The gas leaked from a storage tank of union carbide plant in Bhopal gas tragedy was methylamine
- b. ammonia
  - c. phosgene
  - d. methylisocyanate
105. Which of the following exists as covalent crystal in the solid state? a. Silicon
- b. Sculpture
  - c. Phosphorous
  - d. Iodine
106. Transfer of heat from hot surrounding too cold refrigerator is an example of
- a. Spontaneous reaction
  - b. Non spontaneous reaction
  - c. First law of thermodynamic
  - d. All
107. In which of the following pairs molecules /ions both the species are not likely to exist?
- a.  $H^{-2}$  :  $He^{2-2}$
  - b.  $H^{2+}_2$  :  $He_2$
  - c.  $H^{-2}$  :  $He^{2+2}$
  - d.  $H^{+2}$  :  $He^{2-2}$
108. One would expect proton to have very large
- a. Ionization potential
  - b. Radius
  - c. Charge
  - d. Hydration energy

109. The mass of 1 mole of electron is
- $9.1 \times 10^{-28}$  g
  - 1.008 mg
  - 0.55 mg
  - $9.1 \times 10^{-27}$  g
110. The  $C_{14}$  to  $C_{12}$  ratio in a wooden article is 13% that of the fresh wood calculate the age of the wooden article. Given that the half-life of  $C_{14}$  is 5770 yr.
- 16989 yr
  - 16858 yr
  - 15675 yr
  - 17700 yr
111. The number of neutrons in the parent nucleus which gives  $N^{14}$  on  $\beta$  emission is 'a'.
- 7
  - 14
  - 6
  - 8
112. A reversible chemical reaction is having two reactants in equilibrium if the concentration of the reactants are doubled then equilibrium constant will be
- Doubled
  - One fourth
  - Halved
  - Remain same
113. Which is the phenomenon who help us to calculate lattice energy of ionic crystal a.
- Hess law
  - Enthalpy of formation
  - Born Haber process
  - None
114. Which of the following will have highest coagulating power for  $As_2S_3$  colloids. a.  $Al^{3+}$
- $PO_4^{3-}$
  - $SO_4^{2-}$
  - $Na^+$
115. This low density of ice compared to water is due to
- Induced dipole induced dipole interactions
  - Dipole induced dipole interactions
  - Hydrogen bonding interaction
  - Dipole dipole interaction

116. The bond order in  $N_2^+$  is
- 1.5
  - 3.0
  - 2.5
  - 2
117. The oxidation number of N in  $NH_3$  is
- +3
  - +5
  - 3
  - 0
118. Which one of the following reactions involves oxidation reductions?
- $H_2 + Br_2 \rightarrow 2 HBr$
  - $NaBr + HCl \rightarrow NaCl + HBr$
  - $HBr + AgNO_3 \rightarrow AgBr + HNO_3$
  - $2NaOH + H_2SO_4 \rightarrow Na_2SO_4 + 2H_2O$
119. How can we predict whether a reaction will be a spontaneous or not  
By calculating its energy
- By understanding its free energy
  - By changing energy levels
  - None
120. What is the molarity of 0.2N  $Na_2CO_3$  solution?
- 0.1M
  - 0M
  - 0.4M
  - 0.2M
121. Spontaneous reaction is one
- Directional ,irreversible ,real process
  - Unidirectional reversible imaginary process
  - Irreversible, unidirectional and real process
  - Imaginary irreversible reaction
122. One liter oxygen gas at S.T.P. will weight:
- 1.43g
  - 2.24g
  - 11.2g

- d. 22.4g
123. Rate of reaction
- Decreases with increase in temperature
  - Increases with increase in temperature
  - May increase or decrease with increase in temperature
  - Does not depend on temperatures
124. Which of these polymers is an addition polymer?
- Nylon
  - Polystyrene
  - Terylene
  - Epoxy resin
125. A catalyst is a substance which
- Is always in the same phase as in the reactions
  - Alters the equilibrium in a reaction
  - Does not participate in the reaction but alters the rate of reaction
  - Participates in the reaction and provide an easier pathway for the same
163. Which structure of protein gives the sequence of amino acids only?
- Primary structure
  - Secondary structure
  - Tertiary structure
  - Quaternary structure
164. An aqueous solution of glucose is 10% in strength. The volume in which 1 g/mol of it is dissolved, will
- 9 l
  - 1.8l
  - 8l
  - 0.9l
165. The strongest Bronsted base is
- $\text{ClO}_3^-$
  - $\text{ClO}_2^-$
  - $\text{ClO}_4^-$
  - $\text{ClO}^-$
166. A solution contains 10 ml 0.1 N NaOH and 10 ml 0.05 N  $\text{H}_2\text{SO}_4$ . pH of this solution is
- Less than 7
  - 7
  - 0
  - Greater than 7

167. A saturated solution of  $\text{Ag}_2\text{SO}_4$  is  $2.5 \times 10^{-2} \text{ M}$  the value of its solubility products is a.
- a.  $62.5 \times 10^{-6}$
  - b.  $6.25 \times 10^{-4}$
  - c.  $15.625 \times 10^{-6}$
  - d.  $3.125 \times 10^{-6}$
168. What is the freezing point of a solution containing 8.1 g HBr in 100 g of the water assuming the acid to be 90% ionized? ( $k_f$  for water = 1.86 k/mol)
- a.  $0.85^\circ\text{C}$
  - b.  $-3.53^\circ\text{C}$
  - c.  $0^\circ\text{C}$
  - d.  $-0.35^\circ\text{C}$
169. The pH value for 1/1000 N-KOH solution is
- a. 3
  - b.  $10^{-11}$
  - c. 2
  - d. 11
170. All fats are
- a. carbohydrates
  - b. Hydrocarbons
  - c. Aldehydes
  - d. Esters

(2)

12. The phenomenon of polarization occurs only in which of the following wave type
- Electromagnetic
- b. Longitudinal
  - c. Mechanical waves
  - d. Matter waves
13. Spontaneous reaction is one
- a. Directional, irreversible, real process
  - b. Unidirectional, reversible, imaginary reaction
  - c. Irreversible, Unidirectional, real process
  - d. Imaginary, reversible reaction
14. Which one of the following solution has the highest boiling point?
- a. 0.1M  $\text{BaCl}_2$

- b. 0.1M glucose
  - c. 0.1M urea
  - d. 0.1M NaCl
15. The pH of 0.005 molar solution of sulphuric acid is approximately:
- a. 0.010
  - b. 1
  - c. 2
  - d. 0.005
16. Given that heat of neutralization of strong acid and strong base as  $-57.1$  kJ. The heat produced when 0.25 mole of HCl is neutralized with 0.25 mole NaOH in aqueous solution is
- a. 14.275kJ
  - b. 57.1kJ
  - c. 22.5kJ
  - d. 28.6kJ
  - e. All
17. Number of moles of NaOH present in 2L of 0.5 M NaOH is
- a. 1.5
  - b. 2.0
  - c. 1.0
  - d. 2.5
18. The molar solution of sulphuric acid is equal to
- a. N/2 solution
  - b. N solution
  - c. 2N solution
  - d. 3N solution
19. Substances exist because they possess
- a. Material
  - b. Molecular bonds
  - c. Volume
  - d. Heat
20. The equilibrium constant for a reaction  $A+2B \rightarrow 2C$  is 40. The equilibrium constant for reaction  $C \rightarrow B + (1/2)A$  is
- a. 40
  - b.  $[1/40]^2$

- c.  $1/40$   
d.  $1/[40]^{1/2}$
21. In the reaction  $2A + B \rightarrow A_2B$ , if the concentration of A is doubled and that of B is halved, then the rate of the reaction will :
- a. Increase 2 times  
b. Increase 4 times  
c. Decrease 2 times  
d. Remain same
22. Correct order among the following is
- a.  $1 \text{ erg} > 1 \text{ j} > 1 \text{ call}$   
b.  $1 \text{ call} > 1 \text{ j} > 1 \text{ erg}$   
c.  $1 \text{ erg} > 1 \text{ call} > 1 \text{ j}$   
d.  $1 \text{ j} > 1 \text{ call} > 1 \text{ erg}$
23. Which is the phenomenon who help us to calculate lattice energy of ionic crystals a.  
Hess law
- b. Enthalpy of formation  
c. Born haber process  
d. None
24. The volatile metal is
- a. Fe  
b. Zn  
c. Cu  
d. Ag
25. Gypsum on heating  $120^\circ \text{C} - 130^\circ \text{C}$  gives
- a. Anhydrous salt  
b. Hemihydrate  
c. Monohydrate  
d. Dehydrates
26. Substances exit because they posses  
Material
- b. Molecular bonds  
c. Volume  
d. Heat

27.  $O_2, N_2$  are present in the ratio of 1:4 by weight the ratio of number of molecules is a.  
7:32
- b. 1:4
  - c. 2:1
  - d. 4:1
28. Chlorine upon reaction with NaOH in cold yields
- a. NaCl, NaClO,  $H_2O$
  - b. NaCl,  $NaClO_3$ ,  $H_2O$
  - c. NaClO,  $NaClO_3$ ,  $H_2O$
  - d. NaCl,  $H_2O$
29. Farming's salt is
- a. NaCl
  - b. HF
  - c.  $KHF_2$
  - d.  $KClO_3$
30. Which of the following is least polarizable?
- a. Ne
  - b. He
  - c. Xe
  - d. Kr
31. Transfer of heat from hot surrounding too cold refrigerator is an example of
- a. Spontaneous reaction
  - b. Non spontaneous reaction
  - c. First law of thermodynamics
  - d. All of above
32. Alkaline  $KMnO_4$  converts ethylene into
- a. Methanol
  - b. Ethanol
  - c. Ethane
  - d. Ethylene glycol
33. Which one of the following is not an isotope of hydrogen?
- a. Deuterium
  - b. Tritium
  - c. Ortho hydrogen
  - d. None



- a.
34. Blue litmus turns red in a solution of pH
- Below 7
  - 7
  - Above 7
  - at all pH
35. maximum ionization potential is of
- Ca
  - Na
  - Be
  - Mg
36. Strongest acid among the following is
- $\text{CCl}_3\text{COOH}$
  - $\text{CH}_3\text{COOH}$
  - $\text{CF}_3\text{COOH}$
  - $\text{CBr}_3\text{COOH}$
37. Which molecule is planar?
- $\text{SF}_4$
  - $\text{XeF}_4$
  - $\text{NF}_3$
  - $\text{SiF}_4$
38. A certain radioactive isotope has a half-life of 50 days. Fraction of the material left behind after 100 days will be
- 125%
  - 25%
  - 50%
  - 75%
39. The RMS speed at NTP of a gas can be calculated from the expression:
- $\sqrt{\left(\frac{3P}{d}\right)}$
  - 
  - 
  -

- b.  $\sqrt{\left(\frac{3PV}{M}\right)}$
- c.  $\sqrt{(3RT\phi M)}$
- d. All of these
40. Prussian blue is
- a.  $K_2Fe[Fe(CN)_6]$
- b.  $K_4[Fe(CN)_6]$
- c.  $Fe_4(Fe(CN)_6)$
- d.  $K_3(Fe(CN)_6)$
41. Following are fundamental ways of transferring energy
- a. Pressure and work
- b. Volume and pressure
- c. Heat and work
- d. Pressure and heat
42. A mixture of camphor and benzoic acid can be separated by
- a. Fractional crystallization
- b. Sublimation
- c. Chemical method
- d. Extraction with solvent

**(3)**

140. the branch of chemistry which convert the chemical energy into electrical energy and electrical energy into chemical energy
- a. thermochemistry
- b. electrochemistry
- c. bio chemistry
- d. none
141. electrolytes have the ability to pass electricity because they posses
- a. free electrons
- b. fused electrolyte
- c. charged ions
- d. none

142. an organic compound X ( molecular formula of  $C_6H_7O_2N$ ) has six atom in a ring system two double bonds and also a nitro group as substituents heterocyclic hemicyclic and aromatic aromatic but not hemicyclic hemicyclic but not aromatic
143. Which one of the following is not a pollution?  
a.  $CO_2$   
b.  $NO_2$   
c.  $CO$   
d.  $SO_2$
144. Ozone hole refers to  
a. Hole in ozone layers  
b. Reduction in thickness of ozone layer in stratosphere  
c. Reduction of thickness of ozone in troposphere  
d. Increase concentration of ozone
145. Which of the following is not present in RNA?  
a. Uracil  
b. Thymine  
c. Ribose  
d. Phosphate
146. In fructose the possible optical isomers are  
a. 12  
b. 8  
c. 16  
d. 4
147. Straight chain hydrocarbons are  
a. In which atoms of C are in a series  
b. Not in a series  
c. In which each carbon is attached at least with three other carbon atom  
d. None
148. In Friedal-craft's alkylation besides  $AlCl_3$  the other reactants are  
a.  $C_6H_6 + NH_3$   
b.  $C_6H_6 + CH_4$   
c.  $C_6H_6 + CH_3Cl$   
d.  $C_6H_6 + CH_3COCl$
149. Benzene is obtained from benzene sulphuric acid by treating with  
a. HCL  
b. NaOH

- c.  $\text{H}_2\text{O}$
  - d.  $\text{NaHCO}_3$
150. Limestone is not used in which of the following manufacturing processes?
- a. Phosphorus from phosphorite
  - b. Ordinary(soda lime) glass
  - c. Iron from hematite
  - d. Solvay process of sodium carbonate

151. Which one of the following allotropic form of carbon is isomorphous with crystalline silicon?
- Graphic
  - Coal
  - Coke
  - Diamond
152. Redox chemical reaction equation can be balanced by
- Oxidation no method
  - Ion electron method
  - Both
  - None
153. The elements with atomic numbers 9,17,35,53,85 and all
- Noble gases
  - Halogens
  - Heavy metals
  - Light metals
154. The conductivity of strong electrolyte
- Increases on dilution slightly
  - Does not change on dilution
  - Decreases on dilution
  - Depends on density of electrolyte itself
155. Metals will displace another metal from the solution of its salt if
- It lies above in electrochemical series
  - It lies below in electrochemical series
  - Cannot replace
  - None
156. Calculate the percentage by weight of NaCl, if 2.0 g of NaCl is dissolved in 20g of water
- 11.2%
  - 9.09%
  - 13.1%
  - 14.25%
157. Which of them are coinage metals
- Cu, Pb ,Ni  
Mn , Cr, Fe  
Cu ,Ag ,Au  
None

158. Which of the following is a buffer solution?  
 Brine
- Blood
  - Glue
  - Solution of  $\text{CuSO}_4$
159. Which of the following statement regarding catalyst is not true?
- A catalyst remains unchanged in composition and quantity at the end of the reaction
  - A catalysts can initiate a reaction
  - A catalyst does not alter the equilibrium in a reversible reaction
  - Catalysts are sometimes very specific respect of reaction
160. Free energy change for a reversible process is
- $>0$
  - $<0$
  - Equal to 0
  - Unpredictable
161. What would be the heat released when an aqueous solution containing 0.5 mole of  $\text{HNO}_3$  is mixed with 0.3 mole of  $\text{OH}^-$  (enthalpy of neutralization is  $-57.1$  kJ)
- 28.5 kJ
  - 17.1 kJ
  - 45.7 kJ
  - 1.7 kJ
162. Lateral overlapping expected
- $\text{O}^-$  bond
  - $\text{—}$   
 $\text{^}$  -bonds
  - Ionic bond
  - Metallic bond
163. Flourine molecule is formed by
- The axial p-p overlap
  - The sidewise p-p overlap
  - The axial s-p overlap
  - The overlap of two  $\text{sp}^2$  hybrid orbital
164. In  $\text{BrF}_3$  molecule, the lone pairs occupy equatorial positions to minimize
- Lone pair – lone pair repulsion
  - Lone pair –bond pair repulsion
  - Bond pair –bond pair repulsion

- d. Lone pair –lone pair repulsion and lone pair –bond pair repulsion
165. Rutherford's experiment led to the discovery of
- Nucleus
  - Electron
  - Proton
  - $\alpha$ -particle
166. The total number of orbitals in a shell with principal quantum number 'n' is
- $2n$
  - $2n^2$
  - $n^2$
  - $n+1$
167. Which is not true with respect to cathode rays?
- A stream of electron
  - Charged particles
  - Move with speed as that of light
  - Can be deflected by magnetic fields
168. The ability to lose electron in electrochemical series
- Increase from top to bottom
  - Decrease from top to bottom
  - No effect
  - None of these
169. What is the concentration of nitrate ions? If equal volumes of 0.1M  $\text{AgNO}_3$  and 0.1 M  $\text{NaCl}$  are mixed together?
- 0.1M
  - 0.2M
  - 0.05M
  - 0.25M

(4)

8. %age of calcium in calcium carbonate is

- c.  
d.
- 80%  
30% c.  
40%
- d. 20%
9. The empirical formula of the compound having 50% Sulphur and 50% oxygen by mass is
- SO
  - S<sub>2</sub>O<sub>3</sub>
  - SO<sub>3</sub>
  - SO<sub>2</sub>
10. Bromine has two isotopes having the relative abundance as <sup>75</sup>Br<sub>39</sub> = 50.51% and <sup>81</sup>Br<sub>35</sub> = 49.49%.  
the average atomic mass of bromine is
- 81
  - 80
  - 79.5
  - 79
11. Equilibrium constant has units if
- No. of moles of reactants and products are same
  - Unequal no of moles
  - Both
  - None of these
12. 1 mole of CH<sub>4</sub> contains
- 6.02 x 10<sup>23</sup> atoms of H
  - 4 g-atom of hydrogen
  - 1.81 x 10<sup>23</sup> molecules of CH<sub>4</sub>
  - 3.0 g of carbon
13. How many moles of helium gas occupy 22.4 l at 0°C at 1 atm. Pressure
- 0.11
  - 0.90
  - 1.0
  - 1.11
14. The number of oxygen atoms in 4.4g of carbon dioxide is approximately?
- 1.2 x 10<sup>23</sup>



- b.  $6 \times 10^{22}$
  - c.  $6 \times 10^{23}$
  - d.  $12 \times 10^{23}$
15. If  $N_A$  is Avogadro's number, then number, then number of valence electrons in 4.2g of nitride ions  $N^{3-}$  is
- a.  $2.4 N_A$
  - b.  $4.2 N_A$
  - c.  $1.6 N_A$
  - d.  $3.2 N_A$
16. Pure water is
- a. Poor conductor
  - b. Very good conductor
  - c. Slight conductance
  - d. Neutral
17. All of the following statements are incorrect for 20 moles of hydrogen peroxide except
- a. 80 mole of atoms
  - b. 30 moles of Oxygen atoms
  - c. 30 moles of hydrogen atoms
  - d. 20 moles of hydrogen atoms
18. Empirical formula and formula unit of an ionic compound
- a. Are always different
  - b. Are always similar
  - c. May be similar or different
  - d. Ionic compound do not have any empirical formula
19. When forward reaction and reverse reaction occur at the same time it is called
- a. Forward equilibrium
  - b. Reverse equilibrium
  - c. Chemical equilibrium
  - d. None of above
20. The largest number of molecules are present in
- a. 3.6g of water
  - b. 4.4g of  $C_2H_5OH$
  - c. 2.8g of CO
  - d. 5.4g of  $N_2O_2$

21. The presence of common ions ----- the solubility of a slightly soluble ionic compound. a. Decreases  
b. Increases  
c. Neither decrease nor increase  
d. None
22. An X gram of calcium carbonate was completely burnt in air. The weight of the solid residue formed is 28 g. what is the value of X in grams  
a. 44  
b. 200  
c. 150  
d. 50
23. What is the concentration of nitrate ions, if equal volumes of 0.1M  $\text{AgNO}_3$  and 0.1M  $\text{NaCl}$  are mixed together?  
a. 0.1M  
b. 0.2M  
c. 0.05M  
d. 0.25M
24. Buffer solutions are  
a. Which resist in change in PH and POH  
b. Only in PH  
c. Only POH  
d. Does not resist
25. The volume in liters of  $\text{CO}_2$  liberated at STP when 10 grams of 90% pure limestone is heated completely is  
a. 22.4  
b. 2.24  
c. 20.16  
d. 2.016
26. An organic compound contains 49.3% carbon, 6.84% hydrogen and its vapors density is 73. Molecular formula of compound is  
a.  $\text{C}_3\text{H}_5\text{O}_2$   
b.  $\text{C}_6\text{H}_{10}\text{O}_4$   
c.  $\text{C}_3\text{H}_{10}\text{O}_2$   
d.  $\text{C}_4\text{H}_{10}\text{O}_2$
27. The number of atoms in 0.004g of magnesium is close to  
a. 24  
b.  $2 \times 10^{20}$

- c.  $10^{20}$
  - d.  $6.02 \times 10^{23}$
28. The weight of 11.2 liters of  $\text{CO}_2$  at STP would be
- a. 88g
  - b. 44g
  - c. 32g
  - d. 22g
29. Wt. of 112 ml of oxygen at STP on liquefaction would be
- a. 0.32g
  - b. 0.64g
  - c. 0.16g
  - d. 0.96g
30. Law of mass action determines
- a. Only products
  - b. Composition of reacting substances and products
  - c. Only reacting substances
  - d. None of above
31. 100g of  $\text{CaCO}_3$  is treated with 1 liter of 1 N HCl. What would be the weight of  $\text{CO}_2$  liberated after the completion of the reaction
- a. 5.5g
  - b. 11g
  - c. 22g
  - d. 33g
32. If we consider that  $1/6$ , in place of  $1/12$ . Mass of carbon atom is taken to be the relative atomic mass unit, the mass of one mole of substance will
- a. Decrease twice
  - b. Increase two fold
  - c. Remains unchanged
  - d. Be a function of the molecular mass of substance
33. If 30mL of  $\text{H}_2$  and 20 mL of  $\text{O}_2$  reacts to form water, what is left at the end of the reaction?
- a. 10mL of  $\text{H}_2$
  - b. 5mL of  $\text{H}_2$
  - c. 10mL of  $\text{O}_2$
  - d. 5mL of  $\text{O}_2$
34. How can we yield maximum ammonia from Haber's process?

- a. High pressure, low temperature, continual removal of ammonia
- b. Low pressure, high temperature, increase the ammonia content
- c. High temperature and high pressure
- d. All of above

35. An ideal gas obeying kinetic gas equation can be liquefied if
- a. Its temperature is more than critical temperature
  - b. Its pressure is more than critical pressure
  - c. Its pressure is more than critical pressure but temperature is less than critical temperature
  - d. It cannot be liquefied at any value of P and T.
36. Kinetic energy of one mole of an ideal gas at 300K in kJ is
- a. 34.8
  - b. 3.48
  - c. 3.74
  - d. 348
37. Le Chatelier's principle discussed the effects of following on equilibrium
- Concentration, work, heat  
Volume, heat, pressure
- c. Concentration, pressure, temperature
  - d. None

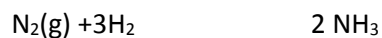
(5)

- 90) Diameter of an atom is in the range of
- a. 0.2m
  - b. 0.2nm
  - c.  $2 \times 10^{-10}$ nm
  - d. 0.2Pm
- 91)  $\Delta H$  neutralization is always
- a. +ive
  - b. -ive
  - c. 0
  - d. +ive or -ive

- 92) The reaction is spontaneous if the cell potential is
- Positive
  - Negative
  - 0
  - Infinite
- 93) Mechanical work is especially important in systems that contain
- Solid-liquid
  - Liquid-liquid
  - Solid –solid
  - Gases
- 94) Which one has same number of electrons protons and neutrons?
- $N_2$  and CO
  - $H_2$  and  $O_2$
  - $N_2$  and  $CO_2$
  - $H_2O$  and  $H_2S$
- 95) Which of the following is not correct?
- Dissolution of  $NH_4Cl$  in excess of water is an endothermic process
  - Neutralization is always exothermic
  - The absolute value of enthalpy (H) can be determined experimentally.
  - The heat of reaction at constant volume is denoted by  $\Delta E$ .
- 96) Which of the following aqueous solution will be basic?
- NaCl
  - $Na_2SO_4$
  - $Na_2CO_3$
  - $FeCl_3$
- 97) At start of reaction, concentration of reactants are on
- Higher side
  - Lower side
  - Optimum side
  - Constant
- 98) Idea of  $pH$  and  $pOH$  was put forward by
- Gibbs
  - Einstein
  - Sorenson
  - Chadwick

- 99) The relative atomic mass of chlorine is 35.5. what is the mass of 2 moles of chlorine gas
- 142g
  - 35.5g
  - 71g
  - 18.75g
- 100) Which of the following factors will favor the reverse reaction in a chemical equilibrium
- Increase in concentration of one of the reactants
  - Increase in concentration of one of the products
  - Removal of one of the products regularly
  - None of these
- 101) Hydrogen gas and iodine vapors combine to form HI at 425 degree centigrade. The same composition of mixture is present if we start with decomposition of HI. It suggests
- Law of mass action
  - A static equilibrium
  - Irreversible reaction
  - A dynamic equilibrium
- 102) Rate expression for  $\text{NH}_3$  synthesis is
- $K_c = X^2 / (a-x)(b-x)$
  - $K_c = X^2 / v(a-x)$
  - $K_c = 4X^2 / v(a-x)$
  - $K_c = 4X^2 v^2 / (a-x)(b-3x)^3$
- 103) AgCl dissolved with concentration  $(Z \times 10^{-2})K_{sp}$  will be
- $3.6 \times 10^{-6}$
  - $3.6 \times 10^{-5}$
  - $7.2 \times 10^{-6}$
  - None
- 104) Isotopes differ in the
- Number of atoms
  - Number of neutron
  - Number of protons
  - Number of electrons

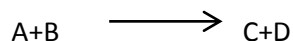
- 105) Which of the following will not change the concentration of ammonia in the equilibrium?



$$\Delta H = -x \text{ kJ}$$

- a) Increase of pressure  
b) Increase of temperature  
c) Decrease of volume  
d) Addition of catalyst
- 106) According to Le Chatelier's principle, adding the heat to a solid and liquid in equilibrium will cause the
- a. Amount of solid to decrease  
b. Amount of liquid to decrease  
c. Temperature to rise  
d. Temperature to fall

- 107) In a reaction



The initial concentrations of A and B were  $0.9 \text{ mol/dm}^3$  each. At equilibrium the concentration of D was found to be  $0.6 \text{ mol/dm}^3$ . What is the value of equilibrium constant for the reaction? a.

8

- b. 9  
c. 4  
d. 3
- 108) One mole of compound AB reacts with one mole of a compound CD according to the equation  $\text{AB}(\text{g}) + \text{CD}(\text{g}) \longrightarrow \text{AD}(\text{g}) + \text{CB}(\text{g})$ . When equilibrium had been established it was found that  $\frac{3}{4}$  mole each of reactants AB and CD had been converted to AD and CB. There is no change in volume. The equilibrium constant for the reaction is
- a.  $\frac{9}{16}$   
b.  $\frac{1}{9}$   
c.  $\frac{16}{9}$   
d. 9
- 109) For most of the chemical reactions the rate of reaction
- a. Increases as the reaction proceeds  
b. Decreases as the reaction proceeds  
c. May increase or decrease during reaction

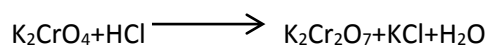
- d. Remains constant as the reaction proceeds
- 110) The rate of reaction  $A+B \longrightarrow$  products the given by equation  $r=k[A][B]$  if the B is taken in large excess, the order of the reaction would be
- 2
  - 1
  - 0
  - Unpredictable
- 111) The Weight of 11.2 litres of  $CO_2$  at S.T.P would be
- 88g
  - 44g
  - 32g
  - 22g
- 112) With increase in 10degree centigrade the rate of reaction doubles. This increase in rate of reaction is due to
- Decrease in activation energy of reaction
  - Decrease in the number collisions between reactant molecules
  - Increase in activation energy of reactants
  - Increase in number of effective collisions
- 113) The time taken for 90% of a 1st order reaction to complete is approximately a. 1.1 times that of half life
- 2.2 times that of half life
  - 3.3 times that of half life
  - 4.4 times that of half life
- 114) The volume occupied by 1.4g of  $N_2$  at S.T.P is
- $2.24 \text{ dm}^3$
  - $22.4 \text{ dm}^3$
  - $1.12 \text{ dm}^3$
  - $112 \text{ cm}^3$
- 115) A reaction involving two different reactants can never be
- Uni-molecular reaction
  - First order reaction
  - Second order reaction
  - Bimolecular reaction



- 116) According to law of mass action rate of a chemical reaction is proportional to
- Concentration of reactants
  - Molar concentration of reactant
  - Concentration of products
  - Molar concentrations of products

- 117) Equal volumes of 0.1M  $\text{AgNO}_3$  and 0.2 M  $\text{NaCl}$  are mixed.the concentration of  $\text{NO}_3^-$  ions in the mixture will be
- 0.1M
  - 0.05M
  - 0.2M
  - 0.15M

- 118) The set of numerical coefficients that balances the chemical equation



- 1,1,2,2,1
- 2,2,1,1,1
- 2,1,1,2,1

2,2,1,2,1

- 119) The Van't Hoff factor ( $i$ ) accounts for
- Degree of solubilisation of solute
  - The extent of dissolution of solute
  - The extent of dissociation of solute
  - The degree of decomposition of solution