100+ Chemistry PYQ of NDA Exam

1.Why is potassium permanganate used for purifying drinking water?

A. It kills germs
B. It dissolves the impurities
C. It is a reducing agent
D. It is an oxidizing agent

2.Which one among the following chemicals is used as washing soda?

A. Calcium carbonate
B. Calcium bicarbonate
C. Sodium carbonate
D. Sodium bicarbonate

3.Which one of the following is a chemical change?

A. Cutting of hair
B. Greying of hair naturally
C. Swelling of resin in water
D. Cutting of fruit

4.Which one of the following gases is placed second in respect of abundance in the Earth's atmosphere?

A. Oxygen
B. Hydrogen
C. Nitrogen
D. Carbon dioxide

5.Zinc is used to protect the iron from corrosion because zinc is _____.

A. more electropositive than iron
B. cheaper than iron

C. a bluish-white metal
D. a good conductor of heat and electricity

6.How much CO_2 is produced on heating of 1 kg of carbon?

A. 11/3 kg
B. 3/11 kg
C. 4/3 kg
D. 3/4 kg

7.The proposition 'equal volumes of different gases contain equal numbers of molecules at the same temperature and pressure' is known as -

A. Avogadro's Hypothesis
B. Gay-Lussac's Hypothesis
C. Planck's Hypothesis
D. Kirchhoff's Theory

8.The compound $C_6H_{12}O_4$ contains –

A. 22 atoms per mole
B. twice the mass percent of H as compared to the mass percent of C
C. six times the mass percent of C as compared to the mass percent of H
D. thrice the mass percent of H as compared to the mass percent of 0

9.The species that have the same number of an electron as ${}^{35}_{17}Cl$ is -

A. ${}^{32}_{16}S$
B. ${}^{34}_{16}S^{+}$
C. ${}^{40}_{18}Ar^{+}$
D. ${}^{35}_{16}S^{2-}$

10.The principal use of Hydrofluoric Acid is -

A. in etching glass
B. as a bleaching agent
C. as an extremely strong oxidizing agent
D. in the preparation of strong organic fluorine compounds

11.Which compound, when dissolved in water, conducts electricity and forms a basic solution?

A. HCl
B. CH_3COOH
C. CH_3OH
D. NaOH

12.When pure water boils vigorously, the bubbles that rise to the surface are composed primarily of –

A. Air
B. Hydrogen
C. Hydrogen and Oxygen
D. Water Vapour

13.Consider the following reaction:

$CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$

Which of the following about the reaction given above is/are correct?

1) Carbon is oxidized.

2) Hydrogen is oxidized.

3) Hydrogen is reduced.

4) Carbon is reduced.

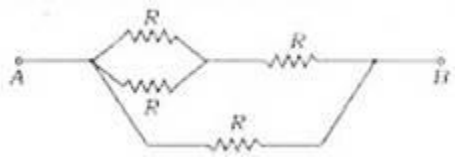
Select the correct answer using the code given below:

A. 1 only
B. 1 and 2 only
C. 2 and 3 only
D. 2 and 4 only

14.The absolute zero temperature is o kelvin. In C unit, which one of the following is the absolute zero temperature?

A. 0 ^{o}C
B. -100 ^{o}C
C. -273.15 ^{o}C
D. -173.15 ^{o}C

15.Consider the following circuit:



Which one of the following is the value of the resistance between points A and B in the circuit given above?

A. $\frac{2}{5}$R
B. $\frac{3}{5}$R
C. $\frac{3}{2}$R
D. 4 R

16.Which one of the following is called dry ice?

A. Solid carbon dioxide
B. Liquid carbon dioxide

C. Liquid nitrogen
D. Liquid ammonia

17.Which one of the following statements is not correct?

A. All carbons in diamond are linked by carbon-carbon single bond.
B. Graphite is layered structure in which layers are held together by weak van der waals forces.
C. Graphite layers are formed by hexagonal rings of carbon atoms.
D. Graphite layers are held together by carbon-carbon single bond.

18.Which one of the following is a tribasic acid?

A. Hydrochloric acid
B. Nitric acid
C. Sulphuric acid
D. Phosphoric acid

19.Which one of the following reactions will give NO (nitric oxide) gas as one of the products?

A. $3Cu + 8HNO_3$ (dilute) →
B. $Cu + 4HNO_3$ (Conc.) →
C. $4Zn + 10HNO_3$ (dilute) →
D. $Zn + 4HNO_3$ (conc) →

20.Permanent hardness of water cannot be removed by which one of the following methods?

A. Treatment with washing soda
B. Calgon's method
C. Boiling
D. Ion exchange method

21.A stainless-steel chamber contains Ar gas at a temperature T and press P. The total number of Ar atoms in the chamber is n. Now Ar gas in the chamber is replaced by CO_2 gas and the total number of CO2 molecules in the chamber is n/2 at the same temperature T. The pressure in the chamber now is P'. Which one of the following relations holds true? (Both the gases behave as ideal gases)

A. P' = P
B. P' = 2P
C. P' = P/2
D. P' = P/4

22.Which one of the following is called 'syngas'?

A. C(s) + H_2O(g)
B. CO(g) + H_2O(g)
C. CO(g) + H_2(g)
D. NO_2(g) + H_2(g)

23.What is the molar mass of anhydrous sodium carbonate? (Given that the atomic masses of sodium, carbon and oxygen are 23 u, 12 u and 16 u respectively)

A. 286 u
B. 106 u
C. 83 u
D. 53 u

24.Which one of the following is a heterogeneous mixture?

A. Hydrochloric acid
B. Vinegar
C. Milk
D. Soda water

25.A sample of oxygen contains two isotopes of oxygen with masses 16 u and 18 u respectively. The proportion of these isotopes in the sample is 3: 1. What will be the average atomic mass of oxygen in this sample?

A. 17.5 u
B. 17 u
C. 16 u
D. 16.5 u

26.The atomic number of an element is 8. How many electrons will it gain to form a compound with sodium?

A. One
B. Two
C. Three
D. Four

27.Which one of the following greenhouse gases is in largest concentration in the atmosphere?

A. Chlorofluorocarbon
B. Nitrous oxide
C. Carbon dioxide
D. Methane

28.Which one of the following statements about the law of conservation of mass is correct?

A. A given compound always contains exactly same proportion of elements.
B. When gases combine in a reaction, they do so in a simple ratio by volume, provided all gases are at room temperature
C. Matter can neither be created nor destroyed
D. Equal volumes of all gases at same temperature and pressure contain equal number of molecules.

29.Which one of the following is the chemical formula of gypsum?

A. $CaSO_4 .2H_2O$
B. Ca_2SiO_4
C. $2CaSO_4 .H_2O$

D. $CaSO_4$

30.Which one of the following is not used as fertilizer?

A. Ammonium nitrate
B. Ammonium sulphide
C. Ammonium phosphate
D. Ammonium sulphate

31.Which one of the following is an oxidation reduction reaction?

A. $NaOH + HCI \rightarrow NaCI + H_2O$
B. $CaO + H_2O \rightarrow Ca(OH)2$
C. $2Mg + O_2 \rightarrow 2MgO$
D. $Na_2SO_4 + BaCl_2 \rightarrow BaSO_4 + 2NaCl$

32.The solution of which one of the following will have pH less than 7 ?

A. NaOH
B. KCl
C. $FeCl_3$
D. NaCl

33.The equivalent weight of oxalic acid in $C_2H_2O_4.2H_2O$ is

A. 45
B. 63
C. 90
D. 126

34.Dinitrogen (N_2) and dioxygen (O_2) are the main constituents of air but they do not react with each other to form oxides of nitrogen because of _____.

A. the reaction requires initiation by a catalyst
B. oxides of nitrogen are unstable

C. the reaction is endothermic and requires very high temperature
D. the stoichiometry of N_2 and O_2 in air is not ideal for the reaction to take place

35.Which one of the following is an organic acid?

A. Hydrochloric acid
B. Nitric acid
C. Acetic acid
D. Sulphuric acid

36.Which one of the following statements is NOT correct for the given reaction?

$Fe(s) + CuSO_4(aq) \rightarrow FeSO_4(aq) + Cu(s)$

A. Iron is the reducing agent
B. The solution turns green in color after the reaction
C. Copper is a more reactive metal than iron
D. The reaction is an example of a redox reaction

37.Which one of the following is used as a binder in paints?

A. Titanium dioxide
B. Novalac
C. Phthalocyanine
D. Silicones

38.In which of the following pairs are the ions isoelectronic?

A. Mg^{2+}, Ar
B. Na^{+}, O^{2-}
C. Al^{3+}, C^{l-}
D. K^{+}, Ne

39.Which one of the following metals does NOT react with cold water?

A. Calcium (Ca)
B. Potassium (K)
C. Magnesium (Mg)
D. Sodium (Na)

40.Which one of the following is an example of a clean fuel?

A. Coke
B. Propane
C. Petrol
D. Wax

41.Which one of the following is NOT a synthetic detergent?

A. $CH_3(CH_2)_{10}CH_2OSO_3^-Na^+$
B. $[CH_3(CH_2)_{15}\text{-}N\text{-}(CH_3)_3]\ ^+Br^-$
C. $CH(CH_2)_{16}COO^-Na^+$
D. $CH(CH_2)_{16}COO(CH_2CH_2O)_{nCH2}CH_2OH$

42.Which one of the following minerals is used as a fuel in nuclear power stations?

A. Bauxite

B. Quartz

C. Feldspar

D. Pitchblende

43.Which one of the following will NOT produce carbon dioxide on reacting with an aqueous solution of hydrochloric acid?

A. Limestone
B. Quick lime
C. Chalk

D. Marble

44.Which one of the following substances is NOT a mixture?

A. Ice
B. Ice-cream
C. Air
D. Honey

45.On exposure to moist air, copper gains a green coat on its surface due to formation of which one of the following compounds?

A. Copper carbonate
B. Copper oxide
C. Copper sulphate
D. Copper Nitrate

46.Chalk and marble are different forms of

A. Calcium hydrogen carbonate
B. Calcium carbonate
C. Calcium acetate
D. Sodium carbonate

47.The number of maximum electrons in N Shell is

A. 2
B. 8
C. 18
D. 32

48.Vinegar is also known as

A. Ethanoic acid
B. Nitric acid

C. Sulphuric acid
D. Tartaric acid

49.Which one of the following statements is NOT correct?

A. Biomass is a renewable source of energy
B. Gobar gas is produced When cow-dung, crop residues, vegetable waste, and sewage are allowed to decompose in the absence of Oxygen
C. Biogas generation reduces soil and water pollution
D. Heating capacity of biogas is very low

50.Which one of the following is the largest composition in biogas?

A. Carbon dioxide
B. Methane
C. Hydrogen
D. Hydrogen sulfide

51.At nearly 70°C, sodium bicarbonate shows the property of gradually decomposing, which makes it usable in bakery products. The product of decomposition responsible for this use of sodium bicarbonate is

A. Carbon dioxide
B. Hydrogen
C. Water vapor
D. Oxygen

52.Number of molecules of water of crystallization in copper sulfate, sodium carbonate, and Gypsum are

A. 5, 10 and 2 respectively
B. 10, 2 and 5 respectively
C. 5, 2 arid 10 respectively
D. 2, 5 and 10 respectively

53.Which one of the following is the correct sequence of change in colors when a turmeric stain on white clothes is scrubbed by soap and then washed with water?

A. Yellow – pink – blue
B. Yellow – reddish-brown – yellow
C. Yellow – reddish-brown – blue
D. Yellow – blue – pink

54.Which one of the following statements regarding Bleaching powder and D.D.T. is correct?

A. Both are inorganic compounds
B. Both are organic compounds
C. Both contain chlorine
D. Both contain calcium

55.Which one of the following is the best example of desiccant?

A. Silica gel
B. Polystyrene
C. Sodium chloride
D. Sodium carbonate

56.Which one of the following was the first mineral acid discovered?

A. Sulphuric acid
B. Hydrochloric acid
C. Nitric acid
D. Phosphoric acid

57.Which one of the following statements is NOT correct?

A. Buckminsterfullerene is an allotrope of carbon
B. Diamond is a good conductor of electricity
C. Graphite is a good conductor of electricity

D. In graphite, each carbon atom is linked to three other carbon atoms

58.How many covalent bonds are present in a Chloropropane molecule having the molecular formula, C_3H_7Cl?

A. 6
B. 8
C. 9
D. 10

59.Which one of the following is the most fundamental characteristic of an element?

A. Melting point
B. Atomic number
C. Colour
D. Atomic weight

60.Neutrons were discovered by

A. James Chadwick
B. Ernest Rutherford
C. J. J. Thomson
D. John Dalton

61.The atomic mass of an element is equal to the sum of the number of

A. electrons and protons only
B. protons and neutrons only
C. electrons and neutrons only
D. electrons, protons and neutrons

62.Glass is a

A. liquid
B. colloid

C. non-crystalline amorphous solid
D. crystalline solid

63.Rutherford's alpha-particle scattering experiment was responsible for the discovery of

A. Electron
B. Proton
C. Nucleus
D. Helium

64.Which one of the following elements is least reactive with water?

A. Lithium
B. Sodium
C. Potassium
D. Cesium

65.Stung by hairs of nettle leaves causes burning pain. This is due to the injection of

A. Acetic acid
B. Methanoic acid
C. Sulphuric acid
D. Hydroloric acid

66.Temporary hardness in water is due to which one of the following of Calcium and Magnesium?

A. Hydrogencarbonates
B. Carbonates
C. Chlorides
D. Sulphates

67.Molecules of which of the following has cage like structure?

1) Diamond

2) Graphite

3) Fullerenes

Select the correct answer using the code given below:

A. 1, 2 and 3
B. 2 and 3 only
C. 2 only
D. 3 only

68.Match List I with List II and select the correct answer using the code given below the Lists:

List I (Noble gas)

A. Argon

B. Neon

C. Krypton

D. Xenon

List II (Use)

1) In lights for advertising display

2) Airport landing lights and in light houses

3) Light in photographer's flash gun

4) In tungsten filament to last longer

A. A-3 B-1 C-2 D-4
B. A-3 B-2 C-1 D-4
C. A-4 B-2 C-1 D-3
D. A-4 B-1 C-2 D-3

69.The valency of an element depends upon the

A. total number of Protons in an atom
B. Mass Number of an atom
C. total number of Neutrons in an atom
D. total number of Electrons in the outermost shell of an atom

70.20 g of common salt is dissolved in 180 g of water. What is the mass percentage of the salt in the solution?

A. 5%
B. 9%
C. 10%
D. 15%

71.Which one of the following elements corrodes rapidly?

A. Aluminium
B. Iron
C. Zinc
D. Silver

72.Which one of the following elements forms highest number of compounds?

A. Oxygen
B. Hydrogen
C. Chlorine
D. Carbon

73.A homogeneous mixture contains two liquids. How are they separated?

A. By filtration
B. By evaporation
C. By distillation
D. By condensation

74.The amount of heat required to change a liquid to gaseous without any change in temperature is known as

A. specific heat capacity
B. mechanical equivalent of heat
C. latent heat of vaporization
D. quenching

75.Which one of the following statements is NOT correct?

A. In the conduction mode of transference of heat, the molecules of solid pass from one molecule to another without moving from their positions
B. The amount of heat required to raise the temperature of a substance is called its specific heat capacity
C. The process of heat transfer in liquids and gases is through convection mode
D. The process of heat transfer from a body at higher temperature to a body at lower temperature without heating the space between them is known as radiation

76.Which one of the following elements is used in pencil-lead?

A. Zinc
B. Lead
C. Carbon (Graphite)
D. Tin

77.The chemical name of Baking Soda is

A. Na_2CO_3
B. $NaHCO_3$
C. $CaCO_3$
D. NaOH

78.Radon is

A. an inert gas
B. an artificial fibre

C. an explosive
D. a metal

79.How many moles of hydrogen atom are present in one mole of Aluminium hydroxide?

A. One mole
B. Two moles
C. Three moles
D. Four moles

80.Which one of the following gases gives acidic solution on dissolving in water?

A. Hydrogen
B. Carbon dioxide
C. Nitrogen
D. Oxygen

81.If one mixes up ashes with animal fat, the substance received in the crude form is called

A. Pheromone
B. Soap
C. Cement
D. Concrete

82.Emulsion is known as a

A. Colloidal solution of substances having different physical states
B. true solution
C. distillation mixture for making alcohols
D. colloidal solution of two liquids

83.The setting time of cement is lowered by adding

A. Oxides of aluminum
B. Gypsum
C. Oxides of magnesium
D. Silica

84.Combination of one volume of Nitrogen with three volumes of Hydrogen produces

A. one volume of ammonia
B. two volume of ammonia
C. three volume of ammonia
D. one and a half volume of ammonia

85.Which one of the following has different number of molecules? (All are kept at normal temperature and pressure)

A. 3 gram of Hydrogen
B. 48 gram of Oxygen
C. 42 gram of Nitrogen
D. 2 gram of Carbon

86.There are six electrons, six protons and six neutrons in an atom of an element. What is the atomic number of the element?

A. 6
B. 12
C. 18
D. 24

87.Identify the element having zero valency

A. Sulphur
B. Phosphorous
C. Lead
D. Radon

88.Match List I with List II and select the correct answer using the code given below the Lists :

List I(Process)

A) Heating Camphor

B) Cooling of water vapour up to room temperature

C) Cooking an egg

D) Formation of Water vapour at room temperature

List II(Type of change)

1) Chemical

2) Evaporation

3) Condensation

4) Sublimation

A. A-4 B-3 C-1 D-2
B. A-4 B-1 C-3 D-2
C. A-2 B-1 C-3 D-4
D. A-2 B-3 C-1 D-4

89.If we plot a graph between volume V and the inverse of pressure P (i.e. $\frac{1}{P}$) for an ideal gas at constant temperature T, the curve so obtained is

A. Straight line
B. Circle
C. Parabola
D. Hyperbola

90.Along a streamline flow of fluid

A. the velocity of all fluid particles at a given instant is constant
B. the speed of a fluid particle remains constant
C. the velocity of all fluid particles crossing a given position is constant
D. the velocity of a fluid particle remains constant

91.The LPG cooking gas contains propane and butane as the constituents. A sulfur-containing compound is added to the LPG, because

A. it lowers the cost of production
B. it enhances the efficiency of LPG
C. it facilitates easy detection of leakage of the gas
D. it assists in liquefying hydrocarbons

92.When one strikes a safety match, the first step is

A. burning of sulfur
B. decomposition of potassium chlorate into potassium chloride and oxygen
C. conversion of a small amount of red phosphorus into white phosphorus
D. burning of glue and starch

93.Which one of the following statements is correct?

A. Covalent bonds are directional
B. lonic bonds are directional
C. Both covalent and ionic bonds are directional
D. Both covalent and ionic bonds are non-directional

94.Which one of the following species is *not* capable of showing disproportionation reaction?

A. CIO-
B. CIO_2^-
C. CIO_3^-
D. CIO_4^-

95.Match List I with List II and select the correct answer using the code given below the Lists :

List I (Element)	List II (Highest Valency)
A. Sulfur	1. Five
B. Phosphorous	2. Six
C. Lead	3. Two
D. Silver	4. Four

A. A-2 B-4 C-1 D-3
B. A-2 B-1 C-4 D-3
C. A-3 B-1 C-4 D-2
D. A-3 B-4 C-1 D-2

96.What is the number of mole (s) of $H_2(g)$ required to saturate one-mole benzene?

A. 1
B. 2
C. 3
D. 4

97.Which one of the following carbon compounds will not give a sooty flame?

A. Benzene
B. Hexane
C. Naphthalene
D. Anthracene

98.Which one of the following elements will not react with dilute HCl

A. Hg
B. Al
C. Mg
D. Fe

99.The temperature at which a solid melts to become a liquid at the atmospheric pressure is called its melting point. The melting point of a solid is an indication of

A. Strength of the intermolecular forces of attraction
B. Strength of the intermolecular forces of repulsion
C. molecular mass
D. molecular size

100.Matter around us can exist in three different states, namely, solid, liquid and gas. The correct order of their compressibility is

A. Liquid < Gas < Solid
B. Solid < Liquid < Gas
C. Gas < Liquid < Solid
D. Solid < Gas < LIquid

101.Which one of the following oxides dissolves in water?

A. CuO
B. Al_2O_3
C. Fe_2O_3
D. Na_2O

102.Suppose you have four test tubes labelled as 'A', 'B', 'C' and 'D'. 'A' contains plain water, 'B' contains the solution of an alkali, 'C' contains the solution of an acid, and 'D' contains the solution of sodium chloride. Which one of these solutions will turn phenolphthalein solution pink?

A. Solution 'A'
B. Solution 'B'
C. Solution 'C'
D. Solution 'D'

103.Which one of the following is water gas?

A. Mixture of carbon monoxide and hydrogen
B. Mixture of carbon monoxide and nitrogen
C. Mixture of carbon dioxide and water vapour
D. Mixture of carbon monoxide and water vapour

104.When a solid is heated, it turns directly into a gas. This process is called

A. Condensation
B. Evaporation
C. Sublimation
D. Diffusion