

TOP 100+ CHEMISTRY QUESTIONS FOR NDA I 2021

1. How many oxygen ions are there in 3 moles of oxygen?

- A. 1.8×10^{23}
- B. 1.8×10^{24}
- C. 1.8×10^{25}
- D. 1.8×10^{22}

2. A compound can release 20% of oxygen by mass on heating. How much compound is needed if 800 g of oxygen is to be released?

- A. 4 kg
- B. 5 kg
- C. 2 kg
- D. 2.5 kg

3. Which of the following has the same number of electrons as ${}_{16}\text{S}^{32}$?

- A. ${}_{17}\text{Cl}^{35-}$
- B. ${}_{15}\text{P}^{31-}$
- C. ${}_{18}\text{Ar}^{40}$
- D. ${}_{19}\text{K}^{39+}$

4. What is the chemical symbol for Tantalum?

- A. Ta
- B. Tl
- C. Te
- D. Th

5. An element has 9 electrons, 9 protons, and 10 neutrons. What is its mass number?

- A. 18
- B. 28
- C. 10
- D. 19



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6. The zig-zag movement of colloidal particles in solution is called _____.

- A. Cataphoresis
- B. Brownian movement
- C. Tyndall effect
- D. Collision

7. Fill in the blanks:

In an electrochemical cell, an oxidation reaction takes place at _____.

- A. Anode
- B. Cathode
- C. Salt bridge
- D. None of the above.

8. Mixing 1M of NaOH and 1M of HCOOH will result in a solution that is

- A. Acidic
- B. Basic
- C. Neutral
- D. None of the above.

9. Which of the given statements are correct?

- I. All atoms have the same atomic mass and atomic radii.
- II. All atoms have atomic orbitals which combine to form new molecular orbitals.

Select the correct answer:

- A. Only I
- B. Only II
- C. Both I and II
- D. None of the above.

10. Which of the given processes are a part of smelting?

- A. Roasting
- B. Reduction
- C. Both A and B



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D. None of the above.

11. Which of the given statements is not true about Lewis base?

- A. It has an electron pair that is not involved in bonding.
- B. It can donate that lone pair.
- C. NH_3 is a Lewis base.
- D. It has an empty orbital to accept a lone pair.

12. Fill in the blank:

_____ is also referred to as the loss of hydrogen atoms from a compound.

- A. Oxidation
- B. Reduction
- C. Hydrogenation
- D. None of the above.

13. Which of the following are examples of addition polymerization?

- A. Terylene
- B. Nylon 6
- C. Polythene
- D. Nylon 6, 6

14. Which of the following are types of synthetic detergents?

- A. Cationic, anionic, non-ionic
- B. Cationic, anionic, ionic
- C. Acidic, basic, neutral
- D. None of the above.

15. Which of the given statements are not true about glycine?

- A. Glycine belongs to the family of amino acids.
- B. It is the simplest and smallest amino acid.
- C. Glycine is the smallest amino acid due to the hydrogen being its R-group.
- D. None of the above.

16. Which one of the following pairs of substances on reaction will not evolve H_2 gas?

- A. Copper and HCl (aqueous)
- B. Iron and steam
- C. Iron and H_2SO_4 (aqueous)
- D. Sodium and ethyl alcohol

17. As per VSEPR Theory, bond angle depends upon-

- A. The number of bonding atoms.
- B. The number of lone pairs.
- C. The radius of bonding atoms.
- D. All of the above.

18. What is the bond angle of a linear-shaped BeF_2 molecule?

- A. 120°
- B. 180°
- C. 160°
- D. 360°

19. The reason why the boiling point of water is very high is due to-

- A. Covalent bonding in water molecules.
- B. Hydrogen bonding between hydrogen and oxygen.
- C. The linear structure of the water molecule.
- D. Water is polar and has a non-linear structure.

20. What makes carbon tetrachloride insoluble in water?

- A. Carbon tetrachloride is non-polar and water is polar.
- B. Carbon tetrachloride is polar and water is non-polar.
- C. Carbon tetrachloride and water are both polar.
- D. None of the above.

21. Distillation process is used for the purification of which metals?



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- A. Cadmium
- B. Lead
- C. Bismuth
- D. Copper

22. According to the IUPAC system, the symbol of the element of atomic number 121 will be

- A. unu
- B. ubu
- C. ubn
- D. bus

23. Egyptian blue $CaCuSi_4O_{10}$ is an example of:

- A. Cyclic silicate
- B. Pyro silicate
- C. Chain silicate
- D. Sheet silicate

24. If there is an electronic configuration of a compound whose valence electrons in element A are 3 and that in element B are 6. Which will be the most probable compound formed from A and B?

- A. AB_2
- B. A_2B
- C. A_6B_3
- D. A_2B_3

25. Match the following columns:

Column I		Column II	
1	$CO(g) + \frac{1}{2}O_2(g) \rightarrow CO_2(g)$	A	Heat of neutralization
2	$2H_2(g) + O_2(g) \rightarrow 2H_2O(l)$	B	Heat of combustion
3	$C(s) + O_2(g) \rightarrow CO_2(g)$	C	Heat of formation
4	$NaOH(aq) + HCl(aq) \rightarrow NaCl(aq) + H_2O(l)$	D	Fuel cell

- A. 1-c 2-a 3-d 4-b
- B. 1-a 2-d 3-b 4-c



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- C. 1-b 2-d 3-c 4-a
- D. 1-d 2-a 3-c 4-b

26. **Assertion:** If we kept water in an open vessel on the surface of the moon, that will evaporate very quickly.

Reason: The temperature of the moon's surface is much higher than the boiling point of water.

- A. If both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
- B. If both Assertion and Reason are correct, but Reason is not the correct explanation of Assertion.
- C. If Assertion is correct but Reason is incorrect.
- D. If both the Assertion and Reason are incorrect.

27. On heating with conc. NaOH solution in an inert atmosphere of CO_2 , white phosphorus gives a gas. Which of the following statement is false about the gas?

- A. It is more basic than NH_3
- B. Its solution in water decay in the presence of light.
- C. It is less basic than NH_3
- D. It is highly poisonous and has smelled like a rotten fish.

28. If 6gm urea is dissolved in 500gm of water, then what will be the mass percentage of urea in the solution?

- A. 2.098%
- B. 1.186%
- C. 1.567%
- D. 2.088%

29. What was the basic idea behind keeping the elements in groups of a periodic table?

- A. Electron affinity
- B. Electronegativity
- C. Ionization potential
- D. Number of electrons in the valence shell

30. Which one of the following statements is false?

- A. Corrosion leads to the contamination of the product.
- B. Replacement of corroded equipment is time-consuming.
- C. Corrosion increases the electrical conductivity of metals.
- D. Corrosion leads to the leakage of toxic liquid or gases.

31. **Assertion:** Pickles are generally stored in a glass container and plastic container

Reason: The ingredients of pickles are highly reactive towards glass/plastic.

- A. If Assertion and Reason both are correct and Reason is the correct explanation of Assertion
- B. If Assertion and Reason both are correct but Reason is not the correct explanation for A
- C. If Assertion is true and Reason is false.
- D. If Assertion is false and Reason is true.

32. Which form of corrosion occurs due to the different concentrations in a component?

- A. Galvanic
- B. Inter-granular
- C. Stress
- D. Uniform

33. **Assertion:** Specific heat capacity of a gas in an adiabatic process is zero and infinite in an isothermal process.

Reason: Specific heat capacity of a gas is directly proportional to the change of heat in a system and is inversely proportional to the change in temperature.

- A. If Assertion and Reason both are correct and Reason is the correct explanation of Assertion
- B. If Assertion and Reason both are correct but Reason is not the correct explanation for A
- C. If Assertion is true and Reason is false.
- D. If Assertion is false and Reason is true.

34. Which of the following compounds consist of an unpaired electron?



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- A. N_2
- B. N_2O
- C. NO_2
- D. NO_3^-

35. Which is not possible to separate through the distillation process?

- A. Aniline and chloroform
- B. Impurities in seawater
- C. Acetone and water
- D. Milk and water

36. What should be the mass percentage of 6gm sodium hydroxide dissolved in 50gm of water?

- A. 10.74%
- B. 10.96%
- C. 12.39%
- D. 12.53%

37. Which property of an element determines its chemical behavior?

- A. Valency
- B. Size
- C. Molar mass
- D. All of these

38. In which type of radioactive decay results in zero change in mass number and atomic number for the starting nucleus?

- A. Beta
- B. Alpha
- C. Gamma rays
- D. Positron emission

39. **Assertion:** Nitrogen is sprayed in potato chips packets to preserve the acidity of potato.

Reason: Nitrogen is used to prevent the contact of chips to air which prevents oxidation.



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- A. If Assertion and Reason both are correct and Reason is the correct explanation of Assertion
- B. If Assertion and Reason both are correct but Reason is not the correct explanation for A
- C. If Assertion is true and Reason is false.
- D. If Assertion is false and Reason is true.

40. Latent heat of Vaporization is

- A. $3.36 \times 10^6 \text{ JKg}^{-1}$
- B. $4.36 \times 10^6 \text{ JKg}^{-1}$
- C. $2.26 \times 10^6 \text{ JKg}^{-1}$
- D. $1.36 \times 10^6 \text{ JKg}^{-1}$

41. MX_6 is a molecule with octahedral geometry. How many X-M-X bonds are at 180° ?

- A. Two
- B. Four
- C. Three
- D. Six

42. Name the positive ion formed when an acid is dissolved in water.

- A. Aqua ion
- B. Hydrogen ion
- C. Hydronium ion
- D. Oxygenium ion

43. Select the tribasic acid from the following:

HNO_3 , H_2SO_4 , HCl , H_3PO_4 , H_3PO_3 , H_3BO_3

- A. HNO_3 , H_2SO_4 , HCl
- B. HCl , H_3PO_4 , H_3PO_3
- C. H_3PO_3 , H_3BO_3
- D. HNO_3 , H_2SO_4 , H_3PO_3

44. _____ acid is present in Grapes.



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- A. Acetic acid
- B. Tartaric acid
- C. Malic acid
- D. Both B & C

45. Select the CORRECT statement/statements amongst the following.

- (I) Carbonic acid gives an acid salt but hydrochloric acid does not.
- (II) Lead carbonate does not react with dilute HCl.
- (III) Dil. HCl acid is stronger than highly concentrated acetic acid.
- (IV) Nitrogen dioxide is a double acid anhydride.

- A. I and II
- B. I and III
- C. I, II, and IV
- D. All of these

46. Match the following:

Column I		Column II	
1	Coagulation	a	Scattering of light
2	Lyophilization	b	Washing of precipitate
3	Peptization	c	Purification of colloids
4	Tyndall effect	d	Electrolyte

- A. 1-c 2-a 3-d 4-b
- B. 1-a 2-d 3-b 4-c
- C. 1-b 2-d 3-c 4-a
- D. 1-d 2-c 3-b 4-a

47. A mole of an ideal diatomic gas underwent an adiabatic expansion from 298K, 15 atm, and 5.25L to 2.5 atm against a constant external pressure of 1 atm. What is the final temperature of the system?

- A. 250 K
- B. 264 K
- C. 300 K
- D. 354 K

48. Statement I: Hydrolysis of ethyl acetate in acidic medium is a pseudo-first-order reaction.

Statement II: $CH_3COOC_2H_5 + H_2O \xrightarrow{H^+} CH_3COOH + C_2H_5OH$. Water does not take part in this reaction.

- A. Statement-I is True, Statement-II is True, and Statement-II is a correct explanation for Statement-I
- B. Statement-I is True, Statement-II is True, and Statement-II is not a correct explanation for Statement-I
- C. Statement-I is True, and Statement-II is False
- D. Statement-I is False, Statement-II is True

49. For the fuel cell reaction: $2H_2 + O_2 \rightarrow 2H_2O$, $\Delta G^\circ = -475\text{KJ}$. Hence, E°_{cell} is:

- A. 1.23V
- B. 2.46V
- C. 0.35V
- D. 0.756V

50. What will be the Effective atomic number of Fe in the brown ring complex $[Fe(H_2O)_5NO]^{2+}$?

- A. 36
- B. 37
- C. 38
- D. 39

51.(a) $FeCl_3$ solution + Zn \rightarrow product X

(b) $FeCl_3$ solution + H_2 gas \rightarrow product Y

$FeCl_3$ the solution gives blue color with $K_4[Fe(CN)_6]$ hence:

- A. X also gives blue color with $K_4[Fe(CN)_6]$.
- B. Y also gives blue color with $K_4[Fe(CN)_6]$.
- C. Both X and Y give blue color with $K_4[Fe(CN)_6]$.

D. None of the above.

52. An electron in a Hydrogen atom in its ground state absorbs 1.50 times as much energy as the minimum requirement for its escape (13.6 eV) from the atom. Thus, KE given to emitted electron is:

- A. 13.6 eV
- B. 20.4 eV
- C. 34.0 eV
- D. 6.8 eV

53. A student suggested that calcium might be made if calcium oxide is reacted with aluminium powder. Was the student correct?

$$\Delta G^{\circ}_f(\text{CaO}) = -604.2 \text{ KJ/mol}$$

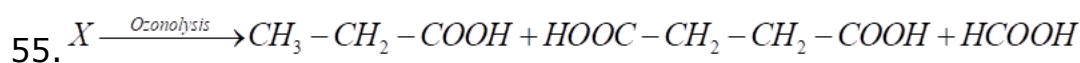
$$\Delta G^{\circ}_f(\text{Al}_2\text{O}_3) = -1582.4 \text{ KJ/mol}$$

- A. Correct
- B. Incorrect
- C. May be
- D. None

54. It has been declared that NH_4NO_3 fertilizer can be rendered unexplorable by a process that involves additives such as diammonium hydrogen phosphate $(\text{NH}_4)_2\text{HPO}_4$. Analysis of such an inactive sample NH_4NO_3 showed the mass percent nitrogen to be 33.81%.

Assuming that the mixture contains only NH_4NO_3 and $(\text{NH}_4)_2\text{HPO}_4$, what should be the mass percentage of each of these two components?

- A. 91.37% and 8.63%
- B. 93% and 7%
- C. 90% and 10%
- D. 80% and 20%



- A. $CH_3 - CH_2 - C \equiv C - (CH_2)_2 - C \equiv CH$
B. $CH_3 - C \equiv C - (CH_2)_3 - C \equiv CH$
C. $CH_3 - CH_2 - C \equiv C - CH_2 - C \equiv CH$
D. $HC \equiv C - (CH_2)_4 - C \equiv CH$

56. The n-type semiconductor is obtained when Si is doped with _____

- A. Ge
B. Al
C. Ga
D. As

57. $NaHC_2O_4$ is neutralized by NaOH and can also be oxidized by $KMnO_4$ (in acidic medium). Equivalent weight is related to molecular weight (M) of $NaHC_2O_4$ in these two reactions as:

- A. M, M
B. $\frac{M}{2}$, M
C. 2M, $\frac{M}{2}$
D. M, $\frac{M}{2}$

58. Partition coefficient of an organic compound (A) is 20 between ether and water. 5gm of (A) in 50ml water is shaken with 50ml ether. (A) extracted into the ether is:

- A. 4.0 g
B. 4.2 g
C. 4.6 g
D. 4.8 g

59. Name the propellant for rockets

- A. Liquid oxygen+ liquid argon
B. Liquid hydrogen+ liquid oxygen
C. Liquid nitrogen+ liquid oxygen
D. Liquid hydrogen+ liquid nitrogen

60. Which polymer is used to make nylon threads?

- A. Polyethylene polymer
- B. Polyester polymer
- C. Polyamide polymer
- D. Polyvinyl polymer

61. Throughout the process of the dehydration of alcohols to alkenes by heating it with conc. H_2SO_4 the initial step is

- A. Formation of an ester
- B. Formation of carbocation
- C. Elimination of water
- D. Protonation of an alcohol molecule

62. **Monochlorination of toluene in the presence of sunlight followed by hydrolysis with aq. NaOH yields.**

- A. o-Cresol
- B. m-Cresol
- C. 2, 4-Dihydroxytoluene
- D. Benzyl alcohol

63. If K and L shells of an atom are fully occupied, then what would be the total number of electrons in the atom?

- A. 5
- B. 6
- C. 7
- D. 10

64. Calculate the mass percentage of oxygen present in the Water and state the law of chemical combination associated. Given, H=1, O=16

- A. 72%
- B. 53%
- C. 79.5%
- D. 88.89%

65. Which of the following statements concerning a meso compound is false?



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- A. There is atleast one element of symmetry in the molecule.
- B. There is an internal compensation for optical inactivity.
- C. There is no chiral centre in the molecule.
- D. It cannot have non- superimposable mirror image.

66. Specific heat of N_2 at constant pressure is $0.25 \text{ cal/g}^\circ\text{C}$. Hence specific heat at constant volume is:

- A. $25 \text{ cal/g}^\circ\text{C}$
- B. $1.72 \text{ cal/g}^\circ\text{C}$
- C. $5.00 \text{ cal/g}^\circ\text{C}$
- D. $0.18 \text{ cal/g}^\circ\text{C}$

67. In a close packing structure of mixed oxides, it is found that lattice has O^{2-} and one-half of octahedral voids are occupied by trivalent cations (A^{3+}) and one-eighth of tetrahedral voids are occupied by divalent cations (B^{2+}). Derive the formula of the mixed oxide.

- A. ABO_4
- B. ABO
- C. $A_2B_2O_4$
- D. A_2BO_4

68. In the following reaction: $2SO_2(g) + O_2(g) \rightarrow 2SO_3(g)$

The rate of formation of SO_3 is 100 g min^{-1} . Hence, the rate of disappearance of O_2 is:

- A. 20 g min^{-1}
- B. 50 g min^{-1}
- C. 100 g min^{-1}
- D. 200 g min^{-1}

69. How many of these given atomic numbers are the atomic numbers of the inner transition elements: 29, 59, 74, 95, 102 and 104



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- A. Three
- B. Four
- C. Two
- D. All of these

70.Reduction of thiosulphate with iodine gives

- A. Sulphite ion
- B. Sulphate ion
- C. Tetrathionate ion
- D. Sulphide ion

71.A dilute solution of Na_2CO_3 was added to two test tubes in which one contains dil. H_2SO_4 'A' while the other containing $Mg(OH)_2$ 'B'. The correct observation was

- A. A colourless gas evolved in test tube 'A'.
- B. A colourless gas evolved in test tube 'B'.
- C. A green gas evolved in test tube 'A'.
- D. A violet gas evolved in test tube 'B'.

72.A "Silica- garden" is developed by the setting of the coloured ions in the void of silicates. It is a case of:

- A. Absorption
- B. Adsorption
- C. Both A and B
- D. None of these

73.Match the following:

Column I		Column II	
1	Aspartic acid	a	Neutral
2	Lysine	b	Acidic
3	Serine	c	Basic

- A. 1-c 2-a 3-b
- B. 1-a 2-c 3-b
- C. 1-b 2-c 3-a
- D. 1-a 2-b 3-c

74. Assertion: Copper releases hydrogen gas from a solution of dilute HCl.

Reason: Hydrogen is situated below copper in the reactivity series.

- A. If both Assertion and Reason are True and the Reason is the correct explanation of the Assertion.
- B. If both Assertion and Reason are True but the Reason is not the correct explanation of the Assertion.
- C. If Assertion is True but the Reason is False.
- D. If both Assertion and Reason are false.

75. Which of the fact is NOT correct about the chemical composition:

- A. the ratio of the substance changes when a chemical change
- B. the clear chemical composition of a substance called chemical
- C. chemical has an unfixed composition
- D. contains certain elements in exact proportions

76. The radioactive silver metal is _____.

- A. Radium
- B. Protactinium
- C. Uranium
- D. Cesium

77. The main idea of the Kinetic molecular theory is all molecules have-

- A. moles
- B. motion
- C. volume
- D. mass

78. The scatter light beam passing through the solution and make its path visible called -

- A. Laser path
- B. Suspension
- C. Brownian movement
- D. Tyndall effect

79. Nucleic acids linked by which type of bonds with an organic base protruding from each sugar?



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- A. Amino
- B. Phosphodiester
- C. Carbonyl
- D. Phosphate

80. Arrange in increasing order of oxidation number of phosphorous?

- A. H_3PO_2 , H_3PO_3 , HPO_3
- B. H_3PO_3 , H_3PO_2 , HPO_3
- C. HPO_3 , H_3PO_3 , H_3PO_2
- D. H_3PO_3 , HPO_3 , H_3PO_2

81. Which of the following statements about the Molecular Orbital Theory is correct?

- i. It could explain the stability of the molecules as per their behavior.
- ii. Bond order can be in the fractions as well.
- iii. It could support the wave theory of molecules as well.
- iv. The Number of orbitals remains the same when a molecule is formed from atoms.

Select the correct answers using the codes given below:

- A. I and iv
- B. ii and iii
- C. None of the above.
- D. All of the above.

82. Identify a mixture where solute does not dissolve and could be seen from naked eyes?

- A. Alloy
- B. Suspension
- C. Solution
- D. Colloid

83. Manganese ions are a cause for colour change in which gemstone?

- A. Topaz
- B. Tourmaline



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- C. Sapphire
- D. Ruby

84. _____ is also called "Artificial Silk".

- A. Nylon
- B. Rayon
- C. Polyester
- D. Polystyrene

85. Match list (I) with list (II) and select the chemicals found in the products using the code given below the lists:

List (I) Products List (II) Chemicals

- | | |
|------------------|---------------------|
| I. Gypsum | 1) Silicon Dioxide |
| II. Cement | 2) Calcium Sulphate |
| III. Pyrex Glass | 3) Iron and Carbon |
| IV. Steel | 4) Boron |

- A. I II III IV
1 2 3 4
- B. I II III IV
2 1 3 4
- C. I II III IV
3 4 2 1
- D. I II III IV
2 1 4 3

86. There are two types of pollutants- Primary and Secondary. Which of the following pollutants are Secondary pollutants:

- 1) Ozone
- 2) Smog
- 3) Particulate Matter
- 4) Methane

Choose the correct option:



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

87. Petroleum found in geological formation beneath the Earth surface, it includes not only crude oil, but all liquid, gaseous and solid hydrocarbons. Identify which of the following hydrocarbon is present in liquid or solid form only?

- A. Methane
- B. Propane
- C. Pentane
- D. Ethane

88. Which of the following comparatively forces bounded to adjacent layers in graphite.

- A. Weak
- B. Strong
- C. Loose
- D. None of the above

89. Which of the following gases has the highest Global Warming Potential:

- A. Methane
- B. Carbon dioxide
- C. Sulfur hexafluoride
- D. Nitrous oxide

90. How many magnesium ions are present in 48 g of magnesium (atomic weight = 24)?

- A. 2
- B. 24
- C. 1.1×10^{24}
- D. 1.2×10^{24}

91. What is the correct electronic configuration of Sulphur?



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- A. 2, 8, 4
- B. 2, 8, 5
- C. 2, 8, 6
- D. 2, 6, 8

92. Charles' law establishes the relationship between which two factors?

- A. Volume and temperature
- B. Volume and pressure
- C. Pressure and temperature
- D. None of the above

93. Which of the following statements is not true about sol?

- A. Sol is a colloid of very small solid particles in a liquid medium.
- B. A sol can show the Tyndall effect.
- C. Blood and Cell fluids are examples of sol.
- D. Paint is not a sol.

94. Which property of elements decreases on moving from left to right in a periodic table?

- A. Electro positivity
- B. Electronegativity
- C. Ionization Energy
- D. None of the above.

95. What is the IUPAC name for aniline?

- A. Phenolamine
- B. Phenylamine
- C. Amino phenol
- D. O-amino phenol

96. Which of the given statements are true about $Zn(OH)_2$?

- A. It is an organic compound.
- B. It is amphoteric.
- C. It is a strong base.
- D. It is a strong acid.



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97. The substance collected as anode mud contains

- A. Impurities of metal
- B. Slag
- C. Flux
- D. Gangue

98. Structure of the Vinyl carbinol is

- A. $CH_3CH(OH) = CH_2$
- B. $CH_3 - CH = CH - OH$
- C. $CH_3 - C(CH_2OH) = CH_2$
- D. $HO - CH_2 - CH = CH_2$

99. Fill in the blanks;

Three states of matter are the result of balance between _____ and the _____ of the molecules.

- A. Intermolecular force, thermal energy
- B. Van-der Waal's force, internal energy
- C. Intermolecular force, internal energy
- D. Potential energy, kinetic energy

100. Under what conditions a real gas would behave ideally?

- A. Low temperature high pressure
- B. High temperature low pressure
- C. Low temperature low pressure
- D. High pressure high temperature

101. What is SI unit of viscosity coefficient (η)?

- A. Pascal
- B. Nsm^{-2}
- C. $km^{-2} s$
- D. $N m^{-2}$

102. Which of the given statements about organic compounds is not true?

- A. Organic compounds mainly contain C and H atoms.
- B. Organic compounds can be synthesized in the laboratory as well.
- C. Organic compounds were once called vital compounds.
- D. Organic compounds if contain halogens, or any other element become inorganic.

103. An element has three shells (K, L, M) and the outer shell has one electron filled. What is the element's valency?

- A. 11
- B. 10
- C. 1
- D. 8

104. Nucleon refers to

- A. Protons and electrons
- B. Protons and neutrons
- C. Only neutrons
- D. Only protons

105. Dipole-Dipole forces exist in:

- A. C_2H_6
- B. CH_4
- C. $CHCl_3$

D. All of these

106. How many moles are there in 1000ml water?

- A. 6.023×10^{23}
- B. 18
- C. 56
- D. 55.55

107. How many electrons are shared by two carbon atoms in one molecule of ethene?

- A. 2
- B. 4
- C. 6
- D. 8

108. The number of atoms present in the 0.2 mol of compound X is.....

- A. 6.022×10^{23} atoms
- B. 12.04×10^{23} atoms
- C. 1.204×10^{24} atoms
- D. 1.204×10^{23} atoms

109. A student heats 25g of reactant X with 30g of reactant Y and gets 55g of product Z. Which of the following laws are explained with the experiment?

- A. Law of conservation of mass
- B. Law of multiple proportions
- C. Law of constant proportion
- D. All of the above.

110. Vanderwaal's equation is a correction formula for the ideal gas equation. The correction term 'a' was used to account for an assumption made in kinetic theory of gases. select the incorrect assumption from the following statements.

- A. Molecules move randomly in all directions.



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- B. Molecules obey Newton's laws of motion
- C. The volume occupied by the atoms of gas is considerably big.
- D. Lack of force of attraction between molecules.

111. Among the following, the most viscous liquid is

- A. Ethanol
- B. Glycerol
- C. Acetic acid
- D. Ethylene glycol

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