

Chemistry Quiz MCQ PDF

1. C-O bond length is minimum in?
(A) CO₂
(B) CO₃²⁻
(C) HCOO⁻
(D) CO
2. Molecules are held together in a crystal by?
(A) Hydrogen bond
(B) Electrostatic attraction
(C) Van der waal's attraction
(D) Dipole-dipole attraction
3. Sp³d² hybridization is present in [Co(3)6³⁺], find its geometry?
(A) Octahedral geometry
(B) Square planar geometry
(C) Tetragonal geometry
(D) Tetrahedral geometry
4. Find the molecules with the maximum dipole moment?
(A) CH₄
(B) NH₃
(C) CO₂
(D) NF₃
5. MX₆ is a molecule with octahedral geometry. How many X – M – X bonds are at 180°?
(A) Four
(B) Two
(C) Three
(D) Six
6. Find the pair with sp² hybridization of central molecules?
(A) NH₃ and NO₂⁻
(B) BF₃ and NH₂⁻
(C) BF₃ and NO₂⁻
(D) NH₂⁻ and H₂O
7. The formal charge and P-O bond order in PO₄³⁻ respectively are?
(A) 0.6, -0.75
(B) 1.25, -0.75

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- (C) 1.0, -0.75
- (D) 1.25, -3

8. Which of the molecules does not have a permanent dipole moment?

- (A) SO₃
- (B) SO₂
- (C) H₂S
- (D) CS₂

9. $p\pi - d\pi$ bonding is present in which molecule?

- (A) SO₃²⁻
- (B) CO₃²⁻
- (C) NO₃⁻
- (D) CO₃³⁻

10. Which one has a pyramidal shape?

- (A) SO₃
- (B) PCl₃
- (C) CO₃²⁻
- (D) NO₃⁻

11. Find the pH of a solution when 0.01M HCl and 0.1 M NaOH are mixed in equal volumes?

- (A) 12.65
- (B) 1.04
- (C) 7.0
- (D) 2.0

12. Which of the following aqueous solution will be the best conductor of electricity?

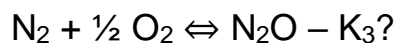
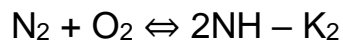
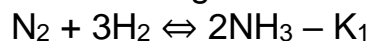
- (A) NH₃
- (B) CH₃COOH
- (C) HCl
- (D) C₆H₁₂O₆

13. In 0.10 M aqueous solution of pyridine (C₅H₅N), find the percentage of pyridine that for pyridinium ion (C₅H₅N⁺H)(k_b for C₅H₅N = 1.7×10^{-9})?

- (A) 1.6%
- (B) 0.77%
- (C) 0.0060%
- (D) 0.013%

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14. Find the equilibrium constant of the reaction, if the equilibrium constant for the following reaction are given



(A) $K_2K_3K_1/K_1$

(B) $K_1K_3^3/K_2$

(C) $K_2K_3^3/K_1$

(D) $K_2^3K_3/K_1$

15. Highest pH will be recorded for which of the following solutions if they are equimolar?

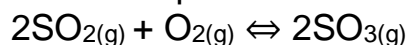
(A) AlCl_3

(B) BaCl_2

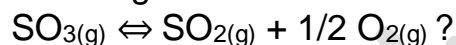
(C) BeCl_2

(D) LiCl

16. The equilibrium constant is 278 for the reaction



At the same temperature, what will be the equilibrium constant for the following reaction



(A) 6×10^{-2}

(B) 1.8×10^{-3}

(C) 1.3×10^{-5}

(D) 3.6×10^{-5}

17. What will be the pH of a buffer solution having an equal concentration of B^- and HB (K_b for B^-)?

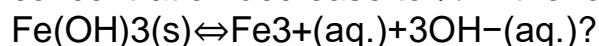
(A) 7

(B) 4

(C) 10

(D) 6

18. Find the increase in equilibrium concentration of Fe^{3+} ions if OH^- ions concentration decrease to $\frac{1}{4}$ in the following reaction



(A) 8 times

(B) 16 times

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- (C) 4 times
- (D) 64 times

19. On increasing the concentration of reactions in a reversible reaction, then equilibrium constant will?

- (A) Depend on the concentration
- (B) Increase
- (C) Unchanged
- (D) Decrease

20. Find the conjugate acid of NH_2^- ?

- (A) NH_3
- (B) NH_4OH
- (C) NH^+
- (D) NH_2^-

21. Photochemical smog normally does not contain?

- (A) Chlorofluorocarbons
- (B) Peroxyacetyl nitrate
- (C) Ozone
- (D) Acrolein

22. Depletion of the ozone layer is caused due to

- (A) Ferrocene
- (B) Fullerenes
- (C) Freons
- (D) Polyhalogens

23. Find the incorrect statement?

- (A) BOD value of clean water is less than 5ppm
- (B) Drinking water pH should be between 5.5-9.5
- (C) Carbon, sulphur and nitrogen oxides are the most widespread air pollutants
- (D) Dissolved oxygen concentration below 5ppm is ideal for the growth of fish

24. Find the secondary pollutant among these?

- (A) PAN
- (B) N_2O
- (C) SO_2
- (D) CO_2

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25. The reaction responsible for the radiant energy of the Sun is?
(A) Nuclear fission
(B) Nuclear fusion
(C) Chemical reaction
(D) Combustion
26. Alum's capacity to purify water is due to?
(A) Softens hard water
(B) Pathogenic bacteria gets destroyed
(C) Impurities' coagulation
(D) It improves taste
27. The coldest region of the atmosphere?
(A) Troposphere
(B) Therosphere
(C) Stratosphere
(D) Mesosphere
28. Which of the oxide of nitrogen is not a common pollutant?
(A) N_2O_5
(B) N_2O
(C) NO
(D) NO_2
29. The compound essential for the process od photosynthesis has this element?
(A) Ca
(B) Ba
(C) Fe
(D) Mg
30. In the air, N_2 and O_2 occur naturally but the do not reactto form oxides of nitrogen because?
(A) Oxides of nitrogen are unstable
(B) Catalyst is required for the reaction
(C) The reaction is endothermic
(D) N_2 and O_2 do not react with each other
31. Which is the best-suited method for the separation of para and ortho-nitrophenols from 1.1 mixture?
(A) Crystallization

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- (B) Chromatography
- (C) Sublimation
- (D) Steam distillation

32. Find the incorrect statement for a nucleophile?

- (A) A nucleophile is a Lewis acid
- (B) Nucleophile do not seek election
- (C) Ammonia is a nucleophile
- (D) Nucleophiles attack low electron density sites

33. Which among the following is the most deactivating meta-directing group in aromatic substitution?

- (A) -COOH
- (B) -SO₃H
- (C) -NO₂
- (D) -CN

34. Ammonia evolved from 0.75 g of the soil sample in the Kjeldahl's method for nitrogen estimation, neutralizes 10 ml of 1M H₂SO₄. Find the percentage of nitrogen present in the soil?

- (A) 35.33
- (B) 37.33
- (C) 43.33
- (D) 45.33

35. The correct order of increasing nucleophilicity is?

- (A) Cl⁻ < Br⁻ < I⁻
- (B) Br⁻ < Cl⁻ < I⁻
- (C) I⁻ < Br⁻ < Cl⁻
- (D) I⁻ < Cl⁻ < Br⁻

36. Homologous series of alkanols have general formula?

- (A) C_nH_{2n}O₂
- (B) C_nH_{2n}O
- (C) C_nH_{2n+1}O
- (D) C_nH_{2n+2}O

37. Find the compound which undergoes nucleophilic substitution reaction exclusively by an S_N1 mechanism?

- (A) Benzyl chloride

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- (B) Chlorobenzene
- (C) Ethyl chloride
- (D) Isopropyl chloride

38. Which of the following methods is best suited for the separation of a mixture containing naphthalene and benzoic acid?

- (A) Crystallization
- (B) Chromatography
- (C) Sublimation
- (D) Distillation

39. How many structural isomers are possible if one hydrogen in diphenyl methane is replaced by chlorine?

- (A) 8
- (B) 4
- (C) 7
- (D) 6

40. Why do we boil the extract with conc. HNO_3 in Lassaigne's test for halogens?

- (A) To increase the concentration of NO_3^- ions
- (B) To increase the solubility product of AgCl
- (C) It increase the precipitation of AgCl
- (D) For the decomposition of M_2S and NaCN formed

41. Which one will have the highest 2nd ionization energy?

- (A) $1s^2 2s^2 2p^6 3s^1$
- (B) $1s^2 2s^2 2p^4$
- (C) $1s^2 2s^2 2p^6$
- (D) $1s^2 2s^2 2p^6 3s^2$

42. Which one is the strongest acid?

- (A) MgO
- (B) CaO
- (C) Al_2O_3
- (D) Na_2O

43. Two different beakers contain $\text{M}_1\text{-O-H}$, and $\text{M}_2\text{-O-H}$ solutions separately. Find the nature of the two solutions if the electronegativity of $\text{M}_1 = 3.4$, $\text{M}_2 = 1.2$, $\text{O} = 3.5$, $\text{H} = 2.1$?

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- (A) acidic, acidic
- (B) basic, acidic
- (C) basic, basic
- (D) acidic, basic

44. The correct order of electronegativity is?

- (A) $\text{Cl} > \text{F} > \text{O} > \text{Br}$
- (B) $\text{F} > \text{O} > \text{Cl} > \text{Br}$
- (C) $\text{F} > \text{Cl} > \text{Br} > \text{O}$
- (D) $\text{O} > \text{F} > \text{Cl} > \text{Br}$

45. Which of the following statements is incorrect?

- (A) I.E.1 of O lower than that of N but I.E.2 O is higher than that of N
- (B) The enthalpy of N to gain an electron is almost zero but of P is 74.3 kJ mol^{-1}
- (C) Isoelectronic ions belong to the same period
- (D) The covalent radius of iodine is less its Van der Waal's radius

46. Which of the reactions will need the maximum amount of energy?

- (A) $\text{Na} \rightarrow \text{Na}^{++} + \text{e}^-$
- (B) $\text{Ca} \rightarrow \text{Ca}^{++} + \text{e}^-$
- (C) $\text{K}^+ \rightarrow \text{K}^{++} + \text{e}^-$
- (D) $\text{C}^{2+} \rightarrow \text{C}^{3+} + \text{e}^-$

47. For the same value of n, the penetration power of orbital follows the order?

- (A) $s = p = d = f$
- (B) $p > s > d > f$
- (C) $f < d < p < s$
- (D) $s < p < d < f$

48. The correct order for the size of I, I⁺, I⁻ is?

- (A) $\text{I} > \text{I}^- > \text{I}^+$
- (B) $\text{I} > \text{I}^+ > \text{I}^-$
- (C) $\text{I}^- > \text{I} > \text{I}^+$
- (D) $\text{I}^+ > \text{I}^- > \text{I}$

49. In the modern periodic table, the number of period of the element is the same as?

- (A) Principal quantum number
- (B) Atomic number

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- (C) Azimuthal quantum number
- (D) Atomic mass

50. Find the successive element of the periodic table with ionization energies, 2372, 520 and 890 kJ per mol respectively?

- (A) Li, Be, B
- (B) H, He, Li
- (C) B, C, N
- (D) He, Li, Be

51. Which of the following serves as an indicator of atmospheric pollution?

- (A) Fern
- (B) Liverworts
- (C) Hornworts
- (D) Epiphytic lichens

52. In 1984, the Bhopal gas tragedy took place because methyl isocyanate?

- (A) Reacted with ammonia
- (B) Reacted with water
- (C) Reacted with DDT
- (D) Reacted with CO₂

53. Negative soil pollution is?

- (A) Reduction in soil productivity due to erosion and overuse
- (B) Reduction in soil productivity due to addition of pesticides and industrial wastes
- (C) Converting fertile land into harden land by dumping ash, sludge and garbage
- (D) None of the above

54. Air pollution that occurs in sunlight is?

- (A) Reducing smog
- (B) Acid rain
- (C) Oxidizing smog
- (D) Fog

55. The layer of atmosphere between 10km to 50km above the sea level is called as?

- (A) Troposphere
- (B) Thermosphere

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- (C) Stratosphere
- (D) Mesosphere

56. The concentration of dissolved oxygen in cold water can go up to?

- (A) 14 ppm
- (B) 8 ppm
- (C) 10 ppm
- (D) 12 ppm

57. The quantity of DDT at each trophic level in the food chain?

- (A) Decreases
- (B) Remain the same
- (C) Increases
- (D) Changes

58. Formation of London smog takes place in?

- (A) Winter during day time
- (B) Summer during day time
- (C) Summer during morning time
- (D) Winter during morning time

59. Brewery and sugar factory waste alter the quality of a water body by increasing?

- (A) Temperature
- (B) Turbidity
- (C) pH
- (D) COD and BOD

60. In a coal-fired power plant electrostatic precipitators are installed to control the emission of?

- (A) SO₂
- (B) NO₂
- (C) SPM
- (D) CO

61. A compound having a bond angle 180° is?

- (A) Alkyne
- (B) Alkane
- (C) Alkene
- (D) Cycloalkane

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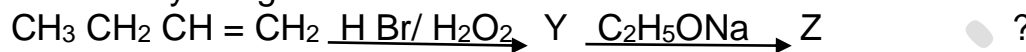
62. C_6H_5CHO is formed when C_6H_6 is treated with CO and HCl in the presence of anhydrous $AlCl_3$. Name of the reaction is?
- (A) Friedel crafts reaction
 - (B) Gattermann Koch reaction
 - (C) Rosenmund reaction
 - (D) Stephen reaction
63. Isopropyl iodide is formed after reaction of propene with HI, this is due to?
- (A) More stable free radical
 - (B) Homolysis
 - (C) More stable carbanion
 - (D) More stable carbocation
64. Which among the following reagent can be used to distinguish between $CH_2BrCH=CH_2$ from $CH_3CH=CHBr$?
- (A) Br_2/CCl_4
 - (B) Cold $KMnO_4$
 - (C) $AgNO_3/C_2H_5OH$
 - (D) $Ag(NH_3)_2OH$
65. Which one of the following compound forms salt on reaction with $NaNH_2$?
- (A) C_2H_2
 - (B) C_2H_6
 - (C) C_6H_6
 - (D) C_2H_4
66. Which one of the following halide can be used in the friedel-crafts reaction?
- (A) Isopropyl chloride
 - (B) Bromobenzene
 - (C) Chlorobenzene
 - (D) Chloroethene
67. Choose the process by which liquid hydrocarbons can be converted to gaseous hydrocarbons?
- (A) Hydrolysis
 - (B) Oxidation
 - (C) Cracking
 - (D) Distillation under reduced pressure

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68. The product obtained on heating 2-Bromopentane with potassium ethoxide in ethanol is?

- (A) 1-pentene
- (B) 2-cis- pentene
- (C) Trans-2- pentene
- (D) 2-ethoxy pentene

69. Identify the given reaction:



- (A) $(\text{CH}_3)_2\text{-CH-O-CH}_2\text{CH}_3$
- (B) $\text{CH}_3\text{-(CH}_2)_4\text{-O-CH}_3$
- (C) $\text{CH}_3\text{-CH(CH}_3)_3\text{-O-CH}_2\text{CH}_3$
- (D) $\text{CH}_3\text{-(CH}_2)_3\text{-O-CH}_2\text{CH}_3$

70. Find the correct order of increasing acidity?

- (A) $\text{CH}=\text{CH} > \text{CH}_2=\text{CH}_2 > \text{CH}_3-\text{C}=\text{CH} > \text{CH}_3-\text{CH}_3$
- (B) $\text{CH}_3-\text{CH}_3 > \text{CH}_2=\text{CH}_2 > \text{CH}_3-\text{C}=\text{CH} > \text{CH}=\text{CH}$
- (C) $\text{CH}_2=\text{CH}_2 > \text{CH}_3-\text{CH}=\text{CH}_2 > \text{CH}_3-\text{C}=\text{CH} > \text{CH}=\text{CH}$
- (D) $\text{CH}=\text{CH} > \text{CH}_3-\text{C}=\text{CH} > \text{CH}_2=\text{CH}_2 > \text{CH}_3-\text{CH}_3$

71. How many orbitals can have the following set of quantum numbers, $n = 3$, $l = 1$, $m_l = 0$?

- (A) 3
- (B) 1
- (C) 4
- (D) 2

72. Electronic configuration of the outer shell of the element Gd with atomic number 64 is?

- (A) $4f^4 5d^5 6s^1$
- (B) $4f^3 5d^5 6s^2$
- (C) $4f^5 5d^4 6s^1$
- (D) $4f^7 5d^1 6s^2$

73. Maximum number of electrons in a subshell can be?

- (A) $4l + 2$
- (B) $4l - 2$
- (C) $2n^2$
- (D) $2l + 1$

74. The orientation of atomic orbitals depends on their?

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- (A) Spin quantum number
- (B) Magnetic quantum number
- (C) Azimuthal quantum number
- (D) Principal quantum number

75. A gas X has C_p and C_v ratio as 1.4 at NTP 11.2 L of gas X will contain _____ number of atoms?

- (A) 1.2×10^{23}
- (B) 3.01×10^{23}
- (C) 2.01×10^{23}
- (D) 6.02×10^{23}

76. Number of unpaired electrons in N^{2+} ?

- (A) 3
- (B) 1
- (C) 2
- (D) 0

77. The excitation energy of a hydrogen atom from its ground state to its third excited state is?

- (A) 12.75 eV
- (B) 0.85 eV
- (C) 10.2 eV
- (D) 12.1 eV

78. 3p orbital has _____ radial nodes?

- (A) 3
- (B) 2
- (C) 1
- (D) 0

79. A 0.66 kg ball is moving with a speed of 100 m/s. Find its wavelength?

- (A) $6.6 \times 10^{-34}m$
- (B) $6.6 \times 10^{-32}m$
- (C) $1.0 \times 10^{-32}m$
- (D) $1.0 \times 10^{-35}m$

80. Orbital angular momentum of p electrons is?

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(a) $\sqrt{3} \frac{h}{2\pi}$

(b) $\sqrt{6} \frac{h}{2\pi}$

(c) $\frac{h}{\sqrt{2\pi}}$

(d) $\sqrt{\frac{3}{2}} \frac{h}{\pi}$

81. With a rise in temperature, the resistance of semiconductors?

- (A) Decreases
- (B) Increases
- (C) First, increase and then decrease
- (D) Remains constant

82. The resistance of a conductor varies inversely as?

- (A) Length
- (B) Area of cross-section
- (C) Temperature
- (D) Resistivity

83. As temperature increases electrolytic conduction?

- (A) Decreases
- (B) Increases
- (C) Remains constant
- (D) None of the above

84. The element with the highest conductivity is?

- (A) Gold
- (B) Silver
- (C) Copper
- (D) Platinum

85. The reciprocal of electrical resistance is?

- (A) Voltage
- (B) Current
- (C) Conductance
- (D) None of the above

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86. Good conductors have many loosely bound?
(A) Atom
(B) Protons
(C) Molecules
(D) Electrons
87. In order to measure current in a resistance present in a circuit, the ammeter is connected?
(A) In series
(B) In parallel
(C) In series or parallel
(D) Nothing can be decided
88. The reciprocal of resistivity of a conductor is?
(A) Conductance
(B) Capacitance
(C) Conductivity
(D) None of the above
89. The SI unit of specific resistance is?
(A) ohm m
(B) ohm/m
(C) ohm/m²
(D) (ohm)⁻¹
90. The unit of conductance cannot be expressed in?
(A) mho
(B) (ohm)⁻¹
(C) Siemens
(D) ohm/m
91. The number of unpaired electrons in gaseous species of Mn³⁺, Cr³⁺ and V³⁺ respectively are?
(A) 4, 4 and 2
(B) 3, 3 and 2
(C) 4, 3 and 2
(D) 3, 3 and 3
92. Gun metal is an alloy of?

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- (A) Cu and Al
- (B) Cu and Sn
- (C) Cu, Zn and Sn
- (D) Cu, Zn and Ni

93. Which one of the following elements shows the maximum number of different states in its compounds?

- (A) Eu
- (B) La
- (C) Cd
- (D) Am

94. When potassium Ferro cyanide are heated with concentrated sulphuric acid, the gas evolved is?

- (A) Sulphur dioxide
- (B) Ammonia
- (C) Carbon monoxide
- (D) Carbon dioxide

95. Zinc and mercury do not show variable valency like d-block element because?

- (A) They are soft
- (B) Their d-shells are complete
- (C) They have only two electrons in the outermost subshell
- (D) Their d-shells are incomplete

96. Which of the following products are obtained when Na_2CO_3 is added to a solution of copper sulphate?

- (A) Basic copper carbonate, sodium sulphate and CO_2
- (B) Copper hydroxide, sodium sulphate and CO_2
- (C) Copper carbonate, sodium sulphate and CO_2
- (D) Copper carbonate, sodium sulphate

97. The pair that has similar atomic radii is?

- (A) Mn and Re
- (B) Ti and Hf
- (C) Sc and Ni
- (D) Mo and W

98. Silver nitrate produces a black stain on the skin due to?

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- (A) Being a strong agent
- (B) Its corrosive action
- (C) Formation of complex compound
- (D) Its reduction to metallic silver

99. According to IUPAC nomenclature sodium nitroprusside dehydrate is named as?

- (A) Sodium pentacyanonitrosylferrate (III)
- (B) Sodium nitroferrocyanide
- (C) Sodium nitroferricyanide
- (D) Sodium pentacyanonitrosylferrate (II)

100. In $\text{Fe}(\text{CO})_5$, the Fe—C bond possesses?

- (A) Ionic character
- (B) Sigma character only
- (C) Pi character
- (D) Both sigma and pi character

Answer

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
D	C	A	B	C	C	B	D	A	B	A	C	D	C	B
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
A	B	D	C	A	A	C	D	A	B	C	D	A	D	C
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
D	A	C	B	A	D	A	C	B	D	A	C	D	B	C
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60

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C C C A D D B A C C C C D D C
61 62 63 64 65 66 67 68 69 70 71 72 73 74 75
A B D C A A C C D D B D A B D
76 77 78 79 80 81 82 83 84 85 86 87 88 89 90
B A C B C A B A B C D A C A D
91 92 93 94 95 96 97 98 99 100
C C D C B D D D A D