

## Quiz: Chemistry set 2

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**Q51: The wavelength associated with an electron moving with a velocity of  $1.1 \times 10^6 \text{ m s}^{-1}$  is closest to:**

- A)  $6.6 \times 10^{-10} \text{ m}$
- B)  $3.3 \times 10^{-10} \text{ m}$
- C)  $1.1 \times 10^{-10} \text{ m}$
- D)  $9.1 \times 10^{-11} \text{ m}$

**Q52: For a reaction  $\text{A} \rightarrow \text{Products}$ , the rate law is  $r = k[\text{A}]^2$ . If  $[\text{A}]$  is doubled, the rate becomes:**

- A) Double
- B) Four times
- C) Half
- D) Unchanged

**Q53: The maximum number of electrons that can have  $n = 3$  and  $l = 1$  is:**

- A) 6
- B) 10
- C) 14
- D) 18

**Q54: The pH of a 0.001 M NaOH solution is:**

- A) 3
- B) 11
- C) 10
- D) 7

**Q55: Which of the following will have highest vapour pressure at the same temperature?**

- A) 0.1 M glucose
- B) 0.1 M NaCl
- C) Pure water
- D) 0.1 M urea

**Q56: The correct order of increasing electronegativity is:**

- A) Al < Mg < Na
- B) Na < Mg < Al
- C) Mg < Na < Al
- D) Al < Na < Mg

**Q57: The shape of IF<sub>7</sub> molecule is:**

- A) Pentagonal bipyramidal
- B) Octahedral
- C) Trigonal bipyramidal
- D) Distorted octahedral

**Q58: Which complex shows optical isomerism?**

- A)  $[\text{Co}(\text{NH}_3)_6]^{3+}$
- B)  $[\text{Pt}(\text{NH}_3)_2\text{Cl}_2]$
- C)  $[\text{Cr}(\text{en})_3]^{3+}$
- D)  $[\text{Ni}(\text{CN})_4]^{2-}$

**Q59: The unit of entropy change is:**

- A)  $\text{J mol}^{-1}$
- B)  $\text{J mol}^{-1}\text{K}^{-1}$
- C)  $\text{kJ mol}^{-1}$
- D)  $\text{J K}^{-1}$

**Q60: Which reagent distinguishes aldehyde from ketone?**

- A) Tollen's reagent
- B) Fehling solution
- C) 2,4-DNP
- D) Both A and B

**Q61: The number of sigma bonds in ethane is:**

- A) 6
- B) 7
- C) 8
- D) 9

**Q62: Which of the following shows maximum covalent character?**

- A)  $\text{NaCl}$
- B)  $\text{MgCl}_2$
- C)  $\text{AlCl}_3$
- D)  $\text{KCl}$

**Q63: The oxidation state of S in  $\text{Na}_2\text{S}_2\text{O}_3$  is:**

- A) +2
- B) +4
- C) +6
- D) Average +2

**Q64: The bond angle in water molecule is:**

- A) 109.5 deg
- B) 120 deg
- C) 104.5 deg
- D) 107 deg

**Q65: Which gas deviates most from ideal behavior?**

- A)  $\text{H}_2$
- B)  $\text{N}_2$
- C)  $\text{CO}_2$
- D)  $\text{He}$

**Q66:** The number of moles of solute required to prepare 500 mL of 0.2 M solution is:

- A) 0.05
- B) 0.1
- C) 0.2
- D) 0.4

**Q67:** Which of the following is strongest base in aqueous solution?

- A) NH<sub>3</sub>
- B) CH<sub>3</sub>NH<sub>2</sub>
- C) (CH<sub>3</sub>)<sub>2</sub>NH
- D) (CH<sub>3</sub>)<sub>3</sub>N

**Q68:** The coordination number of Ni in [Ni(en)<sub>2</sub>Cl<sub>2</sub>] is:

- A) 4
- B) 6
- C) 2
- D) 3

**Q69:** Which of the following is an intensive property?

- A) Mass
- B) Volume
- C) Internal energy
- D) Density

**Q70:** The rate constant of a reaction increases with:

- A) Decrease in temperature
- B) Increase in activation energy
- C) Increase in temperature
- D) Decrease in catalyst

**Q71:** Which compound is used as antacid?

- A) NaHCO<sub>3</sub>
- B) Na<sub>2</sub>CO<sub>3</sub>
- C) CaO
- D) HCl

**Q72:** The total number of valence electrons in NO<sub>3</sub><sup>-</sup> ion is:

- A) 22
- B) 24
- C) 26
- D) 32

**Q73:** Which of the following is strongest oxidizing agent?

- A) F<sub>2</sub>
- B) Cl<sub>2</sub>
- C) Br<sub>2</sub>
- D) I<sub>2</sub>

**Q74: The half-life of radioactive substance is independent of:**

- A) Temperature
- B) Initial amount
- C) Pressure
- D) Both A and C

**Q75: Which of the following is an example of homogeneous catalysis?**

- A) Fe in Haber process
- B) V<sub>2</sub>O<sub>5</sub> in contact process
- C) H<sup>+</sup> in ester hydrolysis
- D) Ni in hydrogenation

**Q76: The correct order of bond length is:**

- A) C≡C < C=C < C-C
- B) C=C < C-C < C≡C
- C) C-C < C=C < C≡C
- D) C≡C < C-C < C=C

**Q77: Which of the following has zero dipole moment?**

- A) NH<sub>3</sub>
- B) H<sub>2</sub>O
- C) CO<sub>2</sub>
- D) SO<sub>2</sub>

**Q78: The pH of buffer remains unchanged on addition of small amount of:**

- A) Strong acid
- B) Strong base
- C) Both A and B
- D) Salt

**Q79: Which of the following is a non-electrolyte?**

- A) NaCl
- B) HCl
- C) Glucose
- D) KOH

**Q80: The IUPAC name of CH<sub>3</sub>-CH(OH)-CH<sub>3</sub> is:**

- A) Propan-1-ol
- B) Propan-2-ol
- C) Ethanol
- D) Methanol

**Q81: Which element has highest electron affinity?**

- A) F
- B) Cl
- C) Br
- D) I

**Q82: The geometry of XeF<sub>4</sub> is:**

- A) Tetrahedral
- B) Square planar
- C) Octahedral
- D) Trigonal bipyramidal

**Q83: Which of the following is a state function?**

- A) Work
- B) Heat
- C) Entropy
- D) Path length

**Q84: The number of pi bonds in ethene is:**

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

**Q85: Which compound shows geometrical isomerism?**

- A) But-1-ene
- B) But-2-ene
- C) Propene
- D) Ethene

**Q86: The unit of molar conductivity is:**

- A) S m<sup>2</sup> mol<sup>-1</sup>
- B) S m<sup>-1</sup>
- C) S mol<sup>-1</sup>
- D) Ohm m

**Q87: Which metal is extracted by electrolytic reduction?**

- A) Fe
- B) Cu
- C) Al
- D) Zn

**Q88: The rate law for a zero order reaction is:**

- A) Rate = k[A]
- B) Rate = k[A]<sup>2</sup>
- C) Rate = k
- D) Rate = k/[A]

**Q89: Which of the following is weakest acid?**

- A) HF
- B) HCl
- C) HBr
- D) HI

**Q90: The oxidation state of Cl in  $\text{ClO}_4^-$  is:**

- A) +5
- B) +6
- C) +7
- D) +3

**Q91: Which compound gives silver mirror test?**

- A) Acetone
- B) Acetic acid
- C) Formaldehyde
- D) Benzophenone

**Q92: The standard enthalpy of formation of an element in its stable form is:**

- A) Positive
- B) Negative
- C) Zero
- D) Infinite

**Q93: Which of the following has maximum hydration energy?**

- A)  $\text{Li}^+$
- B)  $\text{Na}^+$
- C)  $\text{K}^+$
- D)  $\text{Cs}^+$

**Q94: The reagent used to convert carboxylic acid to acid chloride is:**

- A)  $\text{SOCl}_2$
- B)  $\text{NH}_3$
- C)  $\text{HCl}$
- D)  $\text{NaOH}$

**Q95: Which of the following is paramagnetic?**

- A)  $\text{Zn}^{2+}$
- B)  $\text{Cu}^+$
- C)  $\text{Fe}^{3+}$
- D)  $\text{Sc}^{3+}$

**Q96: The correct order of thermal stability of carbonates is:**

- A)  $\text{Li}_2\text{CO}_3 < \text{Na}_2\text{CO}_3 < \text{K}_2\text{CO}_3$
- B)  $\text{K}_2\text{CO}_3 < \text{Na}_2\text{CO}_3 < \text{Li}_2\text{CO}_3$
- C)  $\text{Na}_2\text{CO}_3 < \text{K}_2\text{CO}_3 < \text{Li}_2\text{CO}_3$
- D)  $\text{Li}_2\text{CO}_3 < \text{K}_2\text{CO}_3 < \text{Na}_2\text{CO}_3$

**Q97: Which of the following is a chelating ligand?**

- A)  $\text{NH}_3$
- B)  $\text{H}_2\text{O}$
- C) en
- D)  $\text{Cl}^-$

**Q98: The value of gas constant R in L atm K-1 mol-1 is:**

- A) 0.0821
- B) 8.314
- C) 1.987
- D) 2.303

**Q99: Which of the following is strongest acid in aqueous solution?**

- A) HNO<sub>3</sub>
- B) H<sub>2</sub>SO<sub>4</sub>
- C) HClO<sub>4</sub>
- D) CH<sub>3</sub>COOH

**Q100: The enthalpy change for sublimation is always:**

- A) Positive
- B) Negative
- C) Zero
- D) Unpredictable