

Quiz: Chemistry set 5

Q201: The maximum kinetic energy of photoelectrons emitted from a metal surface depends on:

- A) Intensity of incident light
- B) Time of exposure
- C) Frequency of incident light
- D) Nature of metal only

Q202: For a zero order reaction, the plot of concentration versus time is:

- A) Exponential
- B) Linear
- C) Parabolic
- D) Hyperbolic

Q203: The total number of electrons that can be accommodated in the subshell with $l = 2$ is:

- A) 2
- B) 6
- C) 10
- D) 14

Q204: The pH of a solution with $[OH^-] = 1 \times 10^{-4} M$ is:

- A) 4
- B) 6
- C) 10
- D) 8

Q205: Which colligative property is affected least by association of solute?

- A) Osmotic pressure
- B) Elevation of boiling point
- C) Depression of freezing point
- D) Relative lowering of vapour pressure

Q206: The correct order of metallic character is:

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

Q207: The hybridization of the central atom in SF₄ is:

- A) sp³
- B) sp^{3d}
- C) sp^{3d₂}
- D) sp²

Q208: Which of the following complexes is paramagnetic?

- A) [Ni(CN)₄]²⁻
- B) [Co(NH₃)₆]³⁺
- C) [Fe(CN)₆]⁴⁻



Q209: The SI unit of entropy is:

- A) J
- B) J mol⁻¹
- C) J K⁻¹
- D) J mol⁻¹ K⁻¹

Q210: Which reagent converts aldehyde to primary alcohol?

- A) KMnO₄
- B) NaBH₄
- C) PCC
- D) HNO₃

Q211: The total number of sigma bonds in propane is:

- A) 8
- B) 9
- C) 10
- D) 11

Q212: Which compound has maximum ionic character?

- A) LiF
- B) LiCl
- C) NaCl
- D) KBr

Q213: The oxidation number of chromium in K₂Cr₂O₇ is:

- A) +3
- B) +4
- C) +6
- D) +7

Q214: The bond angle in NH₃ is less than that in CH₄ because:

- A) NH₃ has lower electronegativity
- B) NH₃ has lone pair-bond pair repulsion
- C) CH₄ has stronger bonds
- D) NH₃ is planar

Q215: Which gas behaves most ideally at high temperature and low pressure?

- A) NH₃
- B) CO₂
- C) H₂
- D) SO₂

Q216: How many moles of solute are present in 250 mL of 0.4 M solution?

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

Q217: Which amine is least basic in aqueous solution?

- A) NH₃
- B) CH₃NH₂
- C) (CH₃)₂NH
- D) (CH₃)₃N

Q218: The coordination number of metal in [PtCl₆]²⁻ is:

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

Q219: Which of the following is an extensive property?

- A) Pressure
- B) Density
- C) Temperature
- D) Internal energy

Q220: The value of rate constant increases when:

- A) Temperature decreases
- B) Activation energy increases
- C) Catalyst is used
- D) Concentration decreases

Q221: Which compound is commonly used as an antacid?

- A) NaCl
- B) Al(OH)₃
- C) NH₄Cl
- D) H₂SO₄

Q222: The total number of valence electrons in NO₂⁻ ion is:

- A) 16
- B) 18
- C) 20
- D) 22

Q223: Which is the strongest oxidizing agent among the following?

- A) Cl₂
- B) O₃
- C) KMnO₄
- D) F₂

Q224: The time required for 99% completion of a first order reaction is approximately:

- A) 5 t_{1/2}
- B) 6.6 t_{1/2}
- C) 3.3 t_{1/2}
- D) 10 t_{1/2}

Q225: Which of the following is an example of homogeneous catalysis?

- A) Ni in hydrogenation
- B) Fe in Haber process
- C) H⁺ in ester hydrolysis
- D) V₂O₅ in contact process

Q226: The correct order of bond energy 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

Q227: Which molecule has zero dipole moment?

- A) NH₃
- B) H₂O
- C) CO₂
- D) HCl

Q228: A buffer solution shows maximum resistance to pH change when:

- A) pH = 7
- B) pH = pK_a
- C) pH = 14
- D) Only salt is present

Q229: Which of the following is a non-electrolyte in aqueous solution?

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

Q230: The IUPAC name of CH₃-CH₂-CHO is:

- A) Propanone
- B) Propanal
- C) Ethanal
- D) Propanol

Q231: Which halogen has the lowest bond dissociation energy?

- A) F₂
- B) Cl₂
- C) Br₂
- D) I₂

Q232: The geometry of XeF₄ molecule is:

- A) Tetrahedral
- B) Square planar
- C) Octahedral
- D) Linear

Q233: Which of the following is a state function?

- A) Heat
- B) Work
- C) Enthalpy
- D) Path

Q234: The number of pi bonds in ethyne molecule is:

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

Q235: Which compound shows geometrical isomerism?

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

Q236: The SI unit of molar conductivity is:

- A) S m⁻¹
- B) S m² mol⁻¹
- C) Ohm m
- D) Ohm⁻¹ m

Q237: Which metal is extracted by carbon reduction method?

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

Q238: For a first order reaction, the rate law is:

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

Q239: Which acid is weakest in aqueous solution?

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

Q240: The oxidation state of carbon in CO is:

- A) +2
- B) -2
- C) 0
- D) +4

Q241: Which compound gives positive Tollens test?

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

Q242: The standard enthalpy of formation of N₂(g) is:

- A) -286 kJ mol⁻¹
- B) 0
- C) +286 kJ mol⁻¹
- D) -393 kJ mol⁻¹

Q243: Which ion has the highest hydration enthalpy?

- A) Na⁺
- B) K⁺
- C) Li⁺
- D) Cs⁺

Q244: The reagent used to convert carboxylic acid into ester is:

- A) SOCl₂
- B) NaBH₄
- C) Alcohol + acid
- D) PCC

Q245: Which of the following ions is diamagnetic?

- A) Fe³⁺
- B) Mn²⁺
- C) Zn²⁺
- D) Cu²⁺

Q246: The correct order of thermal stability of nitrates is:

- A) LiNO₃ < NaNO₃ < KNO₃
- B) KNO₃ < NaNO₃ < LiNO₃
- C) NaNO₃ < KNO₃ < LiNO₃
- D) LiNO₃ < KNO₃ < NaNO₃

Q247: Which ligand is bidentate?

- A) NH₃
- B) H₂O
- C) en
- D) Cl⁻

Q248: The value of R in calorie per mole per kelvin is:

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

Q249: Which acid is strongest in aqueous solution?

- A) HNO₃
- B) H₂SO₄
- C) HClO₄
- D) CH₃COOH

Q250: The enthalpy change during vaporization is always:

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