



قائمة الاسئلة 2025-04-30 04:14

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- 1) The chemical properties of an element are mainly influenced by
 - 1) - the number of protons in its nucleus.
 - 2) - the size of the nucleus.
 - 3) - the number of neutrons in the nucleus.
 - 4) ☒ + the number of electrons surrounding the nucleus.
- 2) Which one of the following sets of quantum numbers could be those of the distinguishing (last) electron of Ga(31)?
 - 1) - $n = 4, l = 0, m_l = 0, m_s = +1/2$
 - 2) - $n = 5, l = 1, m_l = -1, m_s = -1/2$
 - 3) ☒ + $n = 4, l = 1, m_l = -1, m_s = +1/2$
 - 4) - $n = 5, l = 2, m_l = +2, m_s = -1/2$
- 3) What are the elements in group 1 of the periodic table called?
 - 1) ☒ + alkali metals
 - 2) - fullerenes
 - 3) - halogens
 - 4) - noble gases
- 4) An element's atomic number is the number of _____ in the nucleus of each atom of that element.
 - 1) - protons and neutrons
 - 2) ☒ + protons
 - 3) - electrons
 - 4) - Neutrons
- 5) In Mendeleev's periodic table, elements in each column had similar
 - 1) - . atomic masses.
 - 2) ☒ + properties.
 - 3) - atomic numbers
 - 4) - symbols.
- 6) Elements that belong to the same group have the same number of
 - 1) ☒ + valence electrons.
 - 2) - inner electrons.
 - 3) - neutral electrons.
 - 4) - total electrons
- 7) Group 8 noble gases are relatively inert because
 - 1) - a. they readily form positive ions.
 - 2) - b. they can have either a positive or a negative charge.
 - 3) - c. their outermost energy level is missing one electron.
 - 4) ☒ + d. their s and p orbitals are filled.
- 8) Which of the given elements A, B, C, D and E with atomic number 2, 3, 7, 10 and 30 respectively belong to the same period?
 - 1) - a) A, B, C
 - 2) ☒ + b) B, C, D
 - 3) - c) A, D, E
 - 4) - d) B, D, E
- 9) The elements A, B, C, D and E have atomic number 9, 11, 17, 12 and 13 respectively. Which pair of elements belong to the same group?
 - 1) - a) A and B



- 2) - b) B and D
3) + c) A and C
4) - d) D and E
- 10) What type of hybridization does a BCl_3 molecule undergo?
1) - a) sp
2) + b) sp^2
3) - c) sp^3
4) - d) sp^3d
- 11) What is the bond angle of H-C-H in methane molecule?
1) - a) 104.5°
2) + b) 109.5°
3) - c) 108°
4) - d) 120°
- 12) What do you think is the number of sigma bonds in an 2methyl propene molecule?
1) - a) 6
2) - b) 7
3) - c) 10
4) + d) 11
- 13) Which molecule has a linear arrangement of all component atoms?
1) - (a) CH_4
2) - (b) H_2O
3) + (c) CO_2
4) - (d) NH_3
- 14) Which of the following four molecules are polar: PH_3 OF_2 HF CO_2 ?
1) + (a) all except CO_2
2) - (b) only HF
3) - (c) only HF and OF_2
4) - (d) none of these
- 15) A triple bond contains ____ sigma bond(s) and ____ pi bond(s).
1) - (a) 0, 3
2) - (b) 3, 0
3) - (c) 2, 1
4) + (d) 1, 2
- 16) What is the bond order in O_2^+ ($\text{O}=8$)?
1) - (a) 3.5
2) - (b) 2.0
3) - (c) 1.5
4) + (d) 2.5
- 17) The number of unpaired electrons in the Be_2 ($\text{B}=4$) molecule is _____.
1) + (a) zero
2) - (b) 1
3) - (c) 2
4) - (d) 3
- 18) Arrange the following molecules in decreasing bond length.
1) - a) $\text{O}_2 > \text{O}_2^- > \text{O}_2^+ > \text{O}_2^{2-}$
2) + b) $\text{O}_2^{2-} > \text{O}_2^- > \text{O}_2 > \text{O}_2^+$
3) - c) $\text{O}_2^{2-} > \text{O}_2^- > \text{O}_2^+ > \text{O}_2$
4) - d) $\text{O}_2^- > \text{O}_2^+ > \text{O}_2^{2-} > \text{O}_2$
- 19) On the basis of molecular orbital theory, select the most appropriate option.



- 1) - a) The bond order of O₂ is 2.5 and it is paramagnetic
2) - b) The bond order of O₂ is 1.5 and it is paramagnetic
3) - c) The bond order of O₂ is 2 and it is diamagnetic
4) ☒ d) The bond order of O₂ is 2 and it is paramagnetic
- 20) What is the empirical and molecular formula for sucralose? The percent composition is 36.25% C, 4.82% H (1), 26.75% Cl (35.5) and 32.19% O (16). The molar mass is 397.63 g/mole.
1) - a. C₁₀ H₁₉ Cl₈ O₇
2) - b. C₅ H₄ Cl₅ O₈
3) ☒ c. C₁₂ H₁₉ Cl₃ O₈
4) - d. C₈ H₁₉ Cl₃ O₁₀
- 21) Triethylenemelamine has an empirical formula of C₃H₄N₂ (C=12, N=14, H=1) and a molar mass of 204.23 g/mole. What is the correct molecular formula?
1) ☒ a. C₉H₁₂N₆
2) - b. C₆H₈N₄
3) - c. CHN
4) - d. C₁₂H₁₈N₃
- 22) The IUPAC name of CH₃CHO is
1) ☒ 1. Ethanal
2) - 2. Ethanol
3) - 3. Acetaldehyde
4) - 4. Acetone
- 23) The IUPAC name of CH₃-O-C₂H₅ is
1) ☒ 1. Methoxy ethane
2) - 2. Ethoxy ethane
3) - 3. Methyl ethane
4) - 4. Ethyl ethane
- 24) Identify the smallest alkane which can form a ring structure.
1) - 1. Ethane
2) - 2. Cyclo ethane
3) - 3. Propane
4) ☒ 4. Cyclopropane
- 25) Saturated hydrocarbons are otherwise referred as _____
1) ☒ a) Alkanes
2) - b) Alkenes
3) - c) Alkynes
4) - d) Alkaloids
- 26) Dienes are the name given to compounds with _____
1) - a) Exactly a double bond
2) - b) Exactly a triple bond
3) ☒ c) Exactly two double bond
4) - d) More than two double bond
- 27) Choose the correct molecular formula of alkane from the following
1) ☒ (a) C₄H₁₀
2) - (b) C₅H₁₀
3) - (c) C₆H₆
4) - (d) C₄H₈
- 28) boiling point of ethanol is..... than boiling point of ethane
1) - a. lower
2) - b. the same



- 3) ☒ c. higher
4) ☐ d. non above
- 29) the geometrical isomerism (cis and trans) occur in
1) ☐ a. alkanes
2) ☒ b. alkenes
3) ☐ c. alkynes
4) ☐ d. non above
- 30) Choose the final products of C_4H_{10} combustion in the excess of oxygen:
1) ☒ a) CO_2 and H_2O ;
2) ☐ b) CO and H_2O ;
3) ☐ c) C_2H_6 and C_2H_4 ;
4) ☐ d) C_4H_9OH .
- 31) The conversion of cyclohexene to cyclohexane requires the reagent(s)
1) ☐ a. HCl
2) ☐ b. H_2O and H_2SO_4
3) ☐ c. H_2 and H_2SO_4
4) ☒ d. H_2 and Pt
- 32) Which of the following matches of names and molecules are correct? a. Alcohol I. $HCOOH$
b. Aldehyde II. $(CH_3)_3COH$
c. Ketone III. CH_3OCH_3
d. Acid IV. CH_3COCH_3
1) ☐ (a) C and III, D and IV
2) ☐ (b) B and II, D and I
3) ☐ (c) A and III, B and IV
4) ☒ (d) A and II, C and IV
- 33) The addition of water to alkene yield
1) ☐ (a) aldehyde
2) ☒ (b) alcohol
3) ☐ (c) carboxylic acid
4) ☐ (d) Ketone
- 34) To obtain halo-alkane react alkenes with
1) ☐ (a) Hydrogen
2) ☐ (b) Halogens
3) ☒ (c) Hydrogen halide
4) ☐ (d) Water
- 35) The boiling point of straight chain alkanes increases as the number of carbons increases. This is because
1) ☐ (a) the larger the molecule, the greater the dipole moment
2) ☐ (b) Larger molecules usually can form hydrogen bonding better
3) ☐ (c) Larger molecules can pack tightly together
4) ☒ (d) Larger molecules have greater attractive forces