



قائمة الاسئلة

كيمياء عامة للعلوم الصحية - المستوى الرابع - قسم جميع التخصصات - كلية الطب والعلوم الصحية - برامج العلوم الطبية التطبيقية - الفترة الثانية - د/ فانتن حميد عبدالله ثامر

1) In the periodic table from left to right in a period the atomic radius

PERIODIC TABLE OF THE ELEMENTS

| | | | | | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 1 H 1.0079 | IIA | | | | | | | | | | | | | | | | 2 He 4.0026 |
| 3 Li 6.941 | 4 Be 9.0122 | | | | | | | | | | | 5 B 10.811 | 6 C 12.011 | 7 N 14.007 | 8 O 15.999 | 9 F 18.998 | 10 Ne 20.180 |
| 11 Na 22.990 | 12 Mg 24.305 | | | | | | | | | | | 13 Al 26.982 | 14 Si 28.086 | 15 P 30.974 | 16 S 32.065 | 17 Cl 35.453 | 18 Ar 39.948 |
| 19 K 39.098 | 20 Ca 40.078 | 21 Sc 44.956 | 22 Ti 47.867 | 23 V 50.942 | 24 Cr 51.996 | 25 Mn 54.938 | 26 Fe 55.845 | 27 Co 58.933 | 28 Ni 58.693 | 29 Cu 63.546 | 30 Zn 65.39 | 31 Ga 69.723 | 32 Ge 72.64 | 33 As 74.922 | 34 Se 78.96 | 35 Br 79.904 | 36 Kr 83.80 |
| 37 Rb 85.468 | 38 Sr 87.62 | 39 Y 88.906 | 40 Zr 91.224 | 41 Nb 92.906 | 42 Mo 95.94 | 43 Tc (98) | 44 Ru 101.07 | 45 Rh 102.91 | 46 Pd 106.42 | 47 Ag 107.87 | 48 Cd 112.41 | 49 In 114.82 | 50 Sn 118.71 | 51 Sb 121.76 | 52 Te 127.60 | 53 I 126.90 | 54 Xe 131.29 |
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| 87 Fr (223) | 88 Ra (226) | 89-103 Ac-Lr | 104 Rf (261) | 105 Db (262) | 106 Sg (266) | 107 Bh (264) | 108 Hs (277) | 109 Mt (268) | 110 Uun (281) | 111 Uuu (272) | 112 Uub (285) | 114 Uuq (289) | | | | | |
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| 89 Ac (227) | 90 Th 232.04 | 91 Pa 231.04 | 92 U 238.03 | 93 Np (237) | 94 Pu (244) | 95 Am (243) | 96 Cm (247) | 97 Bk (247) | 98 Cf (251) | 99 Es (252) | 100 Fm (257) | 101 Md (258) | 102 No (259) | 103 Lr (262) | | | |

- 1) + decreases
2) - increase
3) - remains same
4) - first decreases then increases
- 2) The lightest metal in periodic table is





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| 87 Fr (223) | 88 Ra (226) | 89-103 Ac-Lr | 104 Rf (261) | 105 Db (262) | 106 Sg (266) | 107 Bh (264) | 108 Hs (277) | 109 Mt (268) | 110 Uun (281) | 111 Uuu (272) | 112 Uub (285) | 114 Uuq (289) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>57 La 138.91</td> <td>58 Ce 140.12</td> <td>59 Pr 140.91</td> <td>60 Nd 144.24</td> <td>61 Pm (145)</td> <td>62 Sm 150.36</td> <td>63 Eu 151.96</td> <td>64 Gd 157.25</td> <td>65 Tb 158.93</td> <td>66 Dy 162.50</td> <td>67 Ho 164.93</td> <td>68 Er 167.26</td> <td>69 Tm 168.93</td> <td>70 Yb 173.04</td> <td>71 Lu 174.97</td> </tr> <tr> <td>89 Ac (227)</td> <td>90 Th 232.04</td> <td>91 Pa 231.04</td> <td>92 U 238.03</td> <td>93 Np (237)</td> <td>94 Pu (244)</td> <td>95 Am (243)</td> <td>96 Cm (247)</td> <td>97 Bk (247)</td> <td>98 Cf (251)</td> <td>99 Es (252)</td> <td>100 Fm (257)</td> <td>101 Md (258)</td> <td>102 No (259)</td> <td>103 Lr (262)</td> </tr> </table> | | | | | | | | | | | | | | | | | | 57 La 138.91 | 58 Ce 140.12 | 59 Pr 140.91 | 60 Nd 144.24 | 61 Pm (145) | 62 Sm 150.36 | 63 Eu 151.96 | 64 Gd 157.25 | 65 Tb 158.93 | 66 Dy 162.50 | 67 Ho 164.93 | 68 Er 167.26 | 69 Tm 168.93 | 70 Yb 173.04 | 71 Lu 174.97 | 89 Ac (227) | 90 Th 232.04 | 91 Pa 231.04 | 92 U 238.03 | 93 Np (237) | 94 Pu (244) | 95 Am (243) | 96 Cm (247) | 97 Bk (247) | 98 Cf (251) | 99 Es (252) | 100 Fm (257) | 101 Md (258) | 102 No (259) | 103 Lr (262) |
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- 1) - Magnesium
 - 2) - Zinc
 - 3) + Lithium
 - 4) - Sodium
- 3) Place the following in order of decreasing bond length [H-F, H-I, H-Br]

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- 1) - H-F > H-Br > H-I





- 2) - H-I > H-F > H-Br
3) + H-I > H-Br > H-F
4) - H-Br > H-F > H-I
- 4) Which of the following is paramagnetic?

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- 1) - N₂ N=7
2) + O₂ O=8
3) - F₂ F=9
4) - Li₂ Li=3
- 5) According to MO theory, which molecule or ion has the highest bond order





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- 1) + N₂ N=7
- 2) - O₂ O=8
- 3) - F₂ F=9
- 4) - Li₂ Li=3
- 6) Which has the highest bond energy?

| PERIODIC TABLE OF THE ELEMENTS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|
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| 19 K 39.098 | 20 Ca 40.078 | 21 Sc 44.956 | 22 Ti 47.867 | 23 V 50.942 | 24 Cr 51.996 | 25 Mn 54.938 | 26 Fe 55.845 | 27 Co 58.933 | 28 Ni 58.693 | 29 Cu 63.546 | 30 Zn 65.39 | 31 Ga 69.723 | 32 Ge 72.64 | 33 As 74.922 | 34 Se 78.96 | 35 Br 79.904 | 36 Kr 83.80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 37 Rb 85.468 | 38 Sr 87.62 | 39 Y 88.906 | 40 Zr 91.224 | 41 Nb 92.906 | 42 Mo 95.94 | 43 Tc (98) | 44 Ru 101.07 | 45 Rh 102.91 | 46 Pd 106.42 | 47 Ag 107.87 | 48 Cd 112.41 | 49 In 114.82 | 50 Sn 118.71 | 51 Sb 121.76 | 52 Te 127.60 | 53 I 126.90 | 54 Xe 131.29 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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- 1) + N₂ N=7





- 2) - O₂ O=8
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7) Which has the longest bond length

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- 1) - N₂ N=7
2) - O₂ O=8
3) + F₂ F=9
4) - O₂ - O=8

8) Electronegativity ___ from left to right within a period and ___ from top to bottom within a group.





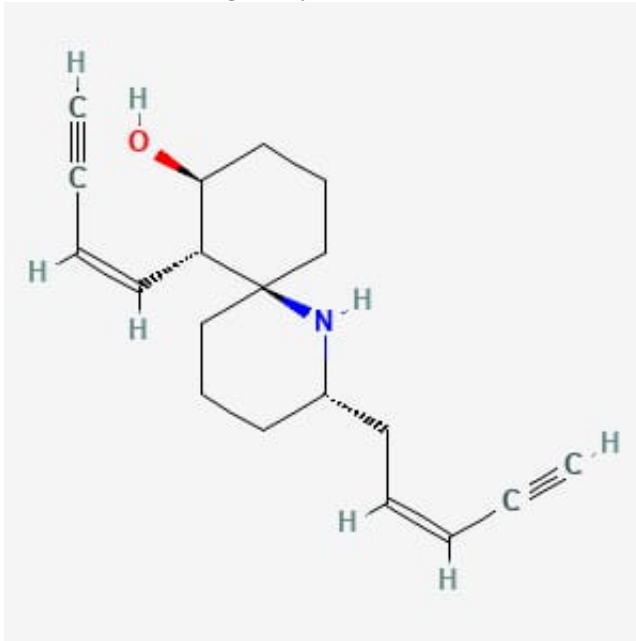
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- 1) - increases, increases
 - 2) + increases, decreases
 - 3) - decreases, increases
 - 4) - stays the same, increases
- 9) The Lewis structure of AsH₃ shows _____ nonbonding electron pair(s) on As.
- 1) - 0
 - 2) + 1
 - 3) - 2
 - 4) - 3
- 10) VSEPR theory leads us to conclude that the shape of the SO₃ molecule
- 1) - trigonal pyramidal
 - 2) - square planar
 - 3) - regular tetrahedral
 - 4) + triangular planar
- 11) Which hybrid orbital sets is used by the central atom for σ -bonding in the SF₆?
- 1) - sp
 - 2) - sp³
 - 3) + sp³ d²
 - 4) - sp³ d
- 12) What is the total number of π -bonds in the benzene molecule?
- 1) - 0
 - 2) - 1
 - 3) - 2
 - 4) + 3
- 13) Which list of elements is arranged in order of increasing atomic radii from left to right in the list?
- 1) - Li, Be, B, C
 - 2) - Sc, Ti, V, Cr

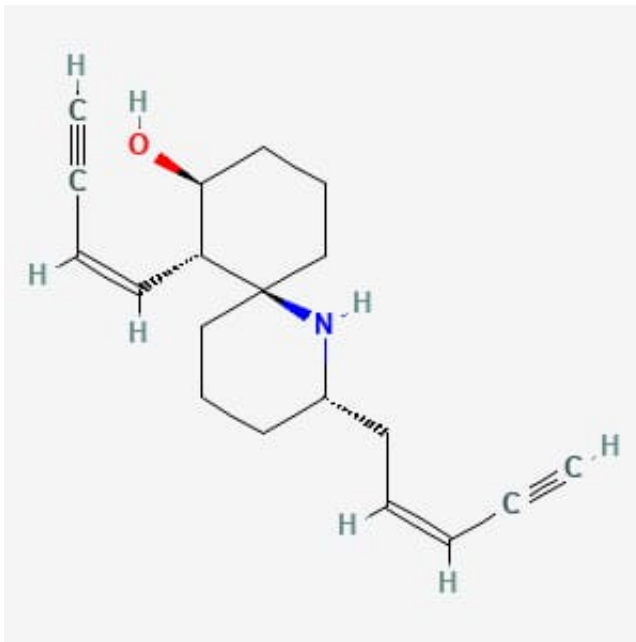




- 3) - Sr, Ca, Mg, Be
4) + F, Cl, Br, I
- 14) The energy required to remove the outermost electron from a gaseous atom in the ground state is
- 1) + first ionization energy
2) - activation energy
3) - conductivity
4) - electronegativity
- 15)



- 1) + 6 π bond and 47 σ bonds
2) - 7 π bond and 45 σ bonds
3) - 6 π bond and 40 σ bonds
- 16)



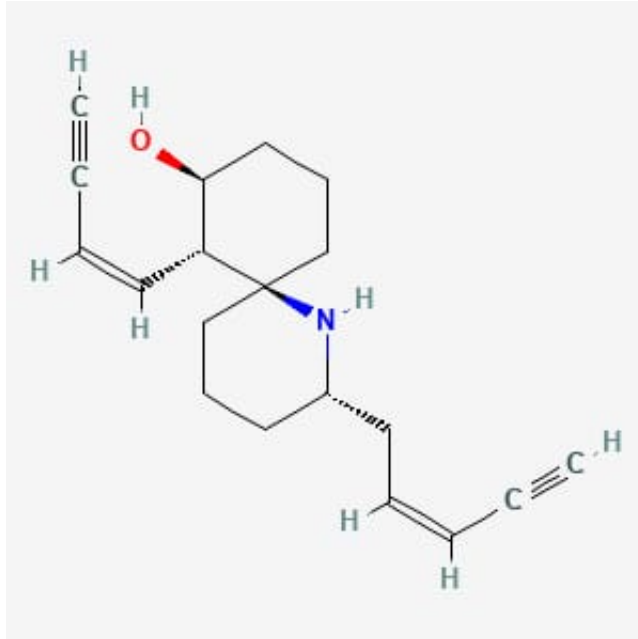
- 1) - 4 carbon sp, 4 carbon sp², and 13 carbon sp³
2) + 4 carbon sp, 4 carbon sp², and 11 carbon sp³





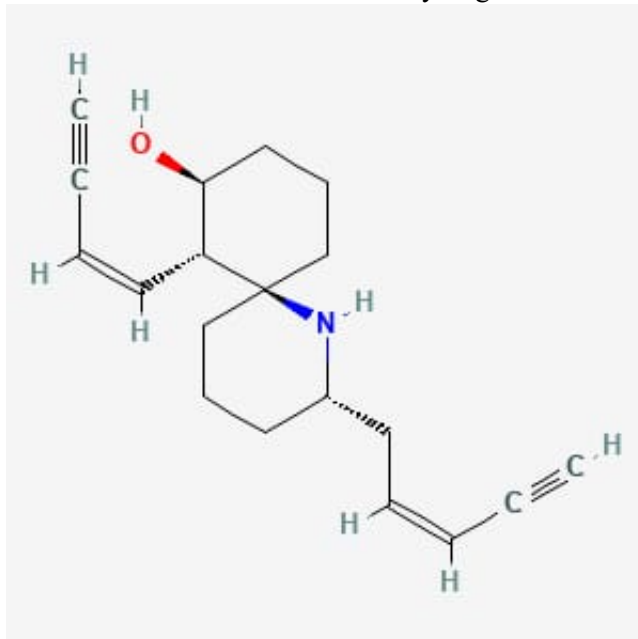
- 3) - 4 carbon sp, 4 carbon sp², and 12 carbon sp³
4) - 4 carbon sp, 4 carbon sp², and 10 carbon sp³

17)



- 1) + 19 carbon atoms and 25 hydrogen atoms
2) - 18 carbon atoms and 20 hydrogen atoms
3) - 19 carbon atoms and 27 hydrogen atoms
4) - 19 carbon atoms and 29 hydrogen atoms

18)



- 1) - alcohol and primary amine
2) - alcohol and secondary amine
3) + alcohol and tertiary amine
4) - alcohol and amide

19) CH₃-CH(Br)-CH₂-COOH

- 1) - 2-bromobutanoic acid





- 2) 3-bromobutanoic acid
3) 3-bromopropanoic acid
4) 2-bromopropanoic acid
- 20) The empirical and molecular formulas of a compound is 43.7% P, and 56.3% O by mass, and has a molar mass of 283.88 g/mol (P=31, O=16) is
- 1) Empirical formula is P₂O₅, molecular formula is P₄O₁₀
2) Empirical formula is PO₂, molecular formula is P₂O₄
3) Empirical formula is P₃O₄, molecular formula is P₆O₈
4) Empirical formula is P₃O₅, molecular formula is P₆O₁₀
- 21) 5-hydroxypentanal contains
- 1) alcohol and aldehyde
2) alcohol and ketone
3) ether and aldehyde
4) ether and ketone
- 22) For the Cl (A.Wt =17g/mol) element
- 1) n=3, l = 1, ml=0, ms=-1/2
2) n=3, l = 1, ml=0, ms= +1/2
3) n=3, l = 1, ml= -1, ms=-1/2
4) n=3, l = 1, ml= +1, ms=-1/2
- 23) boiling point of butane is 2-methyle propane
- 1) higher than
2) lower than
3) equal
4) no relation ship
- 24) The conversion of cyclohexene to cyclohexane requires the reagent(s)
- 1) HCl
2) H₂O and H₂SO₄
3) H₂ and H₂SO₄
4) H₂ and Pt
- 25) The correct order of sub-orbital according to their energies is as following
- 1) 4d > 4f > 5p > 6s
2) 4d < 5p < 6s < 4f
3) 4d > 5p > 6s > 4f
4) 6s < 5p < 4d < 4f
- 26) Carboxylic acids have high boiling point than similar hydrocarbons because of
- 1) Hydrogen bonds
2) High polarity
3) Hydrogen bonds and dipole-dipole bonds
4) dipole-dipole bonds
- 27) The raw material for aspirin is
- 1) formic acid
2) salicylic acid
3) benzoic acid
4) acetic acid
- 28) Used as food preservative
- 1) formic acid
2) salicylic acid
3) benzoic acid
4) acetic acid





- 29) Primary carbon means attach to carbon atom
- 1) - three alkyl group
 - 2) + one alkyl group
 - 3) - two alkyl group
 - 4) - four alkyl group
- 30) Organic acids are metallic acid
- 1) - stronger than
 - 2) + weaker than
 - 3) - more ionization than
 - 4) - equal in strength with
- 31) alkane dissolved in non-polar solvent like
- 1) + tetrachlorocarbon
 - 2) - hydrochloric acid
 - 3) - water
 - 4) - sulphuric acid
- 32) Butane is a.....
- 1) + gas
 - 2) - liquid
 - 3) - solid
 - 4) - wax
- 33) The number of moles for 74 g from $\text{Ca}(\text{OH})_2$ ($\text{Ca}=40, \text{O}=16, \text{H}=1$) are
- 1) + 1.00
 - 2) - 10.00
 - 3) - 20.00
 - 4) - 15.00
- 34) The isomerism between butane and 2-methyl propane is
- 1) + Chain isomerism
 - 2) - Position isomerism
 - 3) - Functional group isomerism
 - 4) - Metamerism
- 35) To obtain halo-alkane react alkenes with
- 1) - Hydrogen
 - 2) - Halogens
 - 3) + Hydrogen halide
 - 4) - Water

