**NEW INDIAN MODEL SCHOOL- SHARJAH**

**HOLIDAY ASSIGNMENT 2014-15**

**CHEMISTRY (CLASS XI KB)**

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1. Hydrogen combines with oxygen in the ratio 2:1.

a) Which law of chemical combination is applied here?

b) State and illustrate the law.

c) The mass of 10 22 molecules of water is --------.

2. 28 g of N2 is mixed with 12 g of H2 to form ammonia.

a) Identify the limiting reagent.

b) What is meant by limiting reagent?

c) Calculate the amount of ammonia formed?

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| 3. To propose a stable atom model, a scientist suggested that angular momentum of an electron is an integral multiple of h/2Π.  a) Identify the scientist. |
| b) Briefly explain the postulates of his model of atom. |
| c) What are the drawbacks of Rutherford model of atom? |

4. Quantum numbers are address of an electron in an atom.

a) Name the three quantum numbers used to describe an orbital. What are the allowed values for these?

b) Calculate the wavelength of the electron moving with a velocity 2.05x 107ms.-1

c) How many electrons can be accommodated in the sub shell n=4,l=2.

5. During a discussion a student argued that the radius of a cation is smaller than the corresponding atom.

a) What is your opinion? Justify it.

b) Differentiate between electron gain enthalpy and electronegativity.

c) Isoelectronic species have different sizes. Analyse the statement.

d) Which element has the maximum electronegativity?

6. Arrange the following in the increasing order of radius.

O-2 , F**-** , Mg 2+, Na+.

7. Correct the false statement(s):

i) Yb and U are transition and Zr and Hf are inner transition elements.

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| 8. a) Identify A to H. |
| |  |  |  |  | | --- | --- | --- | --- | | No.of electron pairs | geometry | Bond angle | Example | | (A) | linear | 1800 | (B) | | 3 | (C) | (D) | BF3 | | 5 | (E) | 1200,900 | (F) | | 6 | octahedral | (G) | (H) |  |  |  |  |  | | --- | --- | --- | --- | | b) Draw the lewis structure of SF6. | |  | | | c) Which out of NH3 and NF3 has higher boiling point? Why? | |  | | | 9. The simplest alkyne acetylene has a linear structure. | | | | | 1. Find out the hybridisation of C –atom in it. | |  | | | b) How many sigma and pi bonds are there in acetylene?  10. a) Draw the resonance structures of CO3 2-.   |  | | --- | | b) Explain the formation of hydrogen on the basis of valance bond theory.  11.a) Find out the oxidation number of S in Na2S2O3. | | b)Fe+ CuSO4 -------FeSO4 +Cu;which species is oxidised,which is  reduced in the above reaction? | |  | | | | | | 12. a) Balance the reaction;  MnO4-- + Fe2+ --🡪Mn2+ + Fe3+ (acidic medium). | | | | | b)What is meant by disproportionation reaction? Give one example. | | | | | 13. Assignment –**HYDROGEN**-submit for CE assessment (after reopening).  14.Record work –Write analysis of cations and anions.  **HAVE A HAPPY & FRUITFUL HOLIDAYS AHEAD** |  | | | ---------------------------------------------------------------------------- | | |  | | |  | | | |  | | | |
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