SET-B

INTERNATIONAL INDIAN SCHOOL , RIYADH

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First Term Examination ,June2012

CLASS:XI **Subject: Chemistry**

Maximum Marks: 70 **Time: 3hours**

GENERAL INSTRUCTIONS:

(i) All questions are compulsory.
(ii) Marks for each question are indicated against it.
(iii) Question numbers 1-8 are very short answer questions and carry 1 mark each.
(iv) Question numbers 9-18 are short answer questions and carry 2 marks each.
(v) Question numbers 19 -27 are also short answer question carry 3 marks each.
(vi) Question numbers 28-30 are long answered questions and carry 5 marks each.
(vii) Use Log Tables, if necessary. Use of calculator is not allowed.

1)State the number of significant figures in the following numbers, a)0.0405,b)50.0 (1)

2) Using s,p,d,f notations describe the orbital with following numbers: a)n=1,l=0& b)n=4,l=2 (1)

3) What would be the IUPAC name and symbol for element with atomic number 120? (1)

4) Define lattice enthalpy. (1)

5) What is covalent radius? (1)

6) Draw resonance structures of CO_3^{2-} ion. (1)

7) Liquid ammonia bottle is cooled before opening the seal. Assign reason. (1)

8) What is Boyle temperature? (1)

9) Write down all the four quantum numbers for a)19th electron of $_{24}Cr$, (2)
b) 21st electron of $_{21}Sc$

10) Arrange the following in the increasing order of property indicated. (2)
a)F, Cl, Br ,I(electron gain enthalpy),
b)Mg^{2+},O^{2-},Na^+,F^-,N^{3-} (ionic size)
c) Mg, Al, Si, Na(ionisation enthalpy)
d)C,N,O,F(Second ionization enthalpy)

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11) What is the physical significance of Ψ^2? In some region around nucleus $\Psi^2=0$, what is the name of this region? (2)

12) How much copper is obtained from 100 g of $CuSO_4$[At. masses of Cu(63.5),S(32) &O(16)] (2)

13) What mass of copper oxide will be obtained by heating 12.35 g of copper carbonate? (Atomic mass of Cu=63.5). (2)

14) Give reasons for the following; (2)
a)Noble gases have positive electron gain enthalpy?
b)Negative electron gain enthalpy of F is less than that of Cl.
c)Second ionisation enthalpy is always more than first ionisation enthalpy.
d)$F^-$is larger than F atom while Na^+ ion is smaller than the of Na atom.

15) An organic compound has the following percentage composition , C=48%, H=8%, N=28%, O=16%, calculate empirical formula of the compound? (2)

16) An 100Watt bulb emits monochromatic light of wave length 400 nm. Calculate number of photons emitted per second by the bulb? (2)

17) A weather balloon has volume of 175 dm^3. When filled with hydrogen gas at a pressure of I bar. Calculate the volume of balloon when it rises to a height where the atmospheric pressure is 0.8 bar. Assume that temperature is constant. (2)

OR

At 25 °C and 760 mm of Hg pressure a gas occupies 600ml volume. What will be its pressure at the height where temperature 10°C and volume of gas is 640ml.

18) a)What is isoelectronic species? Give example? (2)
b)Why alkali metals do not form di-positive ions?

19) a)State Heisenberg's Uncertainty principle. (3)
b)State Aufbau principle.
c)Draw the shape of orbitals with l=1

20) The density of 3M solution of NaCl is 1.25 g/ml. Calculate the Molality of solution? (3)

21) How much magnesium sulphide can be obtained from 2g of Mg and 2 g of S by the reaction $Mg + S \rightarrow MgS$? Which is limiting reagent? Calculate the amount of one of the reactant which remains unreacted. (Atomic masses Mg=24.3, S=32) (3)