PRACTICE PAPER-III

CLASS-XI CHEMISTRY

Time-3hrs M.M-70

General Instructions :

1. All questions are compulsory.
2. Q 1 to Q 5 carry one marks each.
3. Q 6 to Q 10 carry 2 marks
4. Q.11 to Q22 carry 3 marks each
5. Q 23 carry 4 marks
6. Q.24 to Q.26 carry 5 marks

Q.1 BF3 doen not have prot0n but stills acts as an acid and react with NH3 Why it is

so?

Q.2 Write the IUPAC name of the following compound

CH3 H

Q.3 Arrange the following elements in the increasing order of electronegativity

Si ,C , P and N

Q.4 In a process 701 J of heat is absorbed by a system and 394 J of work is done by the system .Calculate the change in internal energy for this process.

Q.5 What is the slope between pV and p at constant temperature.

Q.6 what will be the molality of the solution containing 18.25 g of HCl gas in 500 g of water?

Q.7 Name the reagent used in the following reaction

(a) CH3COOH + 2NaOH-------🡪 CH4 + Na2CO3 + H2O

(b) CH3CH2CH2I------🡪CH3CH2CH3

Q.8 Compare the bond energy and magnetic character of O2+ and O2-  species

Q.9 X react with aqueous NaOH solution to form Y and H2 .Aqueous solution of Y is heated

upto 323-333 K and on passing CO2 into it , Na2CO3 and Z were formed . when Z is heated upto 12000 C Al2O3 is formed . Determine X, Y and Z

Q.11 The compressibility factor for one mole of van der waals’ gas at 00 and 100 atm pressure is found to be 0.5. Assuming that the volume of gaseous molecules is negligible calculate the van der waal constant.

Q.12. (a) Why does hydrogen react mostly at higher temperature?

(b) The sample of hard water is allowed to pass through anion exchanger . Will it producelather with soap easily.

(c) What is hydrolith? How it is prepared?

Q.13. In an organic compound C , H and N are present in 9:1:3.5 ratio by weight . If molecular weight of the compound is 108, then calculate themolecular formula of the compound.

Q.14. Give reason

(1) white fumes appear around the bottle of anhydrous aluminium chloride

(2) Boron is unable to form BF63-  ion.

Q.15. (a) which has higher bond order between O2 and O2-

(b) How many sigmaand pi bond are present in H2S2O6?

Q.16 (a)The electronic configuration of a dipositive ion M2+ is 2,8 14 and its mass number is 56 How many neutrons are present in it.

(b) What is the most probable radius for finding the electron In He+ ?

(c) Electron affinity is positive when O- changed anto O-2

Q.17-0.287 g of AgCl What is the percentage of chlorine in the compound.

Q.18. Neon gas id generally used on signboards if it emits strongly at 616 nm , Calculate

(a) the frequency of emission (b) the energy of quantum

(c) the number of quanta present if it produces 2 j of energy.

Q.19 Which of the following compound will not exist as a resonance hybrid ? Give reasin for your answer

(a) CH3OH (b)R-CONH2 (c)CH3CH=CHCH2NH2

Q.20. (a) How classical smog is different from photochemical smog?

(b) Give two compounds which are responsible for depletion of ozone layer

Q.21(a) The exact frequency distribution of theemitted radiation from a black body depends on temperature Draw the plot of intensity versus wavelengthof the radiation.

(b) Calculate the momentum of a photon of frequency 50x1017 s-1

Q.22 Account for the following

(a) the bleaching action of H2O2

(b)H2O2 is better oxidising agent than water

(c) Complete the following reaction MnO4-(aq) + H2O2 ------🡪

Q.23 Rakhi was very angry because of the oil spot on his favourite suit . Her mother want to make her happy and does not know what to do. Her neighbour Mrs. Sharma advised him to use bleach to remove oil spot.

(a) Do you suggest the same thing to remove the oil spot? Why or why not? Justify your answer.

(b) What is the oxidation number of both the Cl atom in the bleaching powder.

(c) Which substance is available in the market to remove such spot ?

(d) What values are associated with Mrs. Sharma

Q.24. Give reason

(i) Alkali metals are good reducing agents. Explain

(ii) PbO2 is soluble in NaOH and also in HCl

(iii) Sodium oxide solution cannot be stored in Zn or Al vessel

Q.25(a) Draw the structure of main product when 2-butyne reacts with the following reagent

(i) Na or Li in liquid NH3 (ii) Lindlar’s catalyst (iii) Na + C2H5OH

(b) Arrange the following compound in the increasing order of their property indicated

C6H5CH3, C6H5COOH, C6H6, C6H5NO2 (reactivity towards bromination) and why?

Q.26 A gaseous mixture of 3.67 L of ethylene and methane on complete combustion at 250 produces 6.11 L of CO2. Find out the amount of heat evolved on burning 1L of the gaseous mixture. The heat of combustion of ethylene and methane are -1423 and -891 KJmol-1 respectively at 250 C