PRE-BOARD---II

CLASS-XII, CHEMISTRY

TIME—3hr M.M-70

General instruction :-

1. All question are compulsory
2. Q.1 to Q.5 carry 1 mark each
3. Q.6 to Q.10 carry 2 marks each
4. Q.11 to Q.22 carry 3 marks each
5. Q.23 carry 4 marks
6. Q.24 to Q.26 carry 5 marks each

Q.1What happen when dialysis is prolonged?

Q2 Write the IUPAC name of the following compound:

CH3---CH2-----CH2----CH2----COOC2H5

Q.3.A solution of KOH hydrolyses CH3CHC*l*CH2CH3 and CH3CH2CH2CH2C*l*. Which one of these is more easily hydrolysed?

Q.4.What is the formula of a compound in which the element Y forms *hcp* lattice and atoms of X occupy 2/3rd of tetrahedral voids

Q.5. What is rectified spirit?

Q.6(i) What is meant by molality of the solution?

(ii)State Raoult’s law for volatile liquids.

Q.7 Calculate the distance between Na+ and Cl—ions in NaCl crystal, if it density is 2.165g/cm3 (molar mass of NaCl=58.5 g/mol ,NA=6.02 x1023/mole

Q.8(i).Write the balanced chemical equation of the reaction in which KMnO4 acts as an oxidising agent in the acidic medium

(ii)La(OH)3 is more basic than Lu(OH)3, why?

Q.9 Express the relation among cell constant,resistance of the solution in the cell and conductivity of the solution. How is molar conductivity of a solution related to its conductivity

Q.10. Explain the following terms .

(i) F—centres (ii)Schottky defect

Q.11(i) Why is froth flotation method selected for the concentration of sulphide ores?

(ii) One ore is a mixed Sulphide of lead and zinc Suggest a method to seprate the mixture

Q.12(i) Draw the structure of ozone molecule

(ii)(a) Draw the structure of H3PO4 ,(HPO3)3

(b) Does the hydrolyses of XeF6 lead to a redox reaction?

Q.13 (i) Identify A and B in each of the following

(a) CH3CH2Cl-NaCN-------🡪A-Reduction Ni/-H2----------🡪B

(b) C6H5NH2—NaNO2/HCl---273 k-----🡪A-C6H5NH2/OH------------🡪B

Q.14. Discuss the mechanism of SN1 reaction of haloalkane

Q.15. Henry’s law constant for CO2 dissolving in water is 1.67x108 Pa at 298 K. Calculate the quantity of CO2 in 1 L of soda water when packed under 2.5 atm pressure at 298 k

Q.16 How are polymers classified into different categories on the, basis of intermolecular forces? Give an example of a polymer of each of these categories

Q.17. Write the structural and functional difference between RNA and DNA

Q.18 Convert the following

(a) Phenol to aspirin

(b) Salicylic acid to oil of winter green

(c) Phenol to picric acid

Q.19(a). What do you understand by denticity of a ligand ?

(b) Write all the isomers of [Co(NH3)5SO4] Br

Q.20. The emf of a standard Cd-cell is 1.018 V at 25` C . calculate ΔG, ΔH for the cell

Q.21.(a) Differentiate between physisorption and chemisorption

(b) Peptising agent is added to convert precipitate into colloidal solution why?

Q.22 What are analgesics medicines? How are they classified and when are they commonly recommended for use?

Q.23. Surfactants are the substance which get preferentially adsorbed at the air water ,oil-water and solid water interface forming an oriented monolayer where in the hydrophilic groups point towards the aqueous phase and hydrocarbon chains point towards the air or towards the oil phase . Phosphates were added to commercial detergents but the use of detergents containing phosphates is now discouraged

Based on the above passage answer the following passage

(i)why are phosphate added to commercial detergents

(ii)why the use of phosphates is being discouraged in detergents

(iii) Name one biodegradable and one non biodegradable detergents

(iv) What value do you get from the above passage

Q.24 An organic compound A with molecular formula C8H8O forms orange red ppts wit;h 2,4-DNP reagent and gives yellow ppts on heating withiodine in the presence of rebromine water or Baeyer’s reagent. On drastic oxidation with chromidc acid it gives a carboxylic acid B having molecular formula C7H6O2.Identify the compound A and B and explain the reaction involved.

Q.25 Assign reason for the following

(1)Helium finds wide application in diving system.Why

(2)Oxygen forms π bonds whereas sulphur does not form π bonds.

(3)Nitrogen does not form NCI5 but phosphorus form PCl5

(4)Acidic strength decreases in order HCl>H2S>PH3

(5) In the noble gases only xenon forms chemical compounds.

Q.26. The activation energy of a reaction is 75.2 KJ/mol in the absence of a catalyst and 50.14 KJ/mol with a catalyst How many times will the rate of reaction grow in the presence of a catalyst if the reaction proceeds at 250 C? [R=8.314 J/K/mol.

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The chemistry of corrosion of iron is essentially an electrochemical phenomenon. Explain the reactions occurring during the corrosion of iron in the atmosphere

Q. 26. Give reasons for the following:

a. Molten aluminium bromide is poor conductor of electricity. (1)

b. Nitric oxide becomes brown when released in air. (1)

Q.27. a. State two main differences between globular proteins and fibrous proteins.

b. Based on their chemical composition, state how are lipids classified? Give one example of each