PRE- BOARD

CLASS-XII,CHEMISTRY

Time-3 hrs max. Marks-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. 1. A cubic solid is made of two elements X and Y. Atoms V are at the corners of the cube and X at

|  |  |  |  |
| --- | --- | --- | --- |
| the body centre. What is the formula of the compound? | |  | |
| Q.2. | Give the IUPAC name of H2N – CH2 – CH2 - CH = CH2. | |

Q.3.Out of white phosphorus and red phosphorus, which one is more reactive and why ?

Q.4.Name the method used for the refining of Nickel metal

Q.5.What are biodegradable polymers?

Q.6. Calculate the freezing point of a solution containing 50gm of ethylene glycol( molecular mass 62) dissolved in 600gm of water(KF for water= 1.86 K kg/mol)

Q.7. what is secodanry cell? Write the reaction taking place when a lead storage battery is in use.

Q.8.Explain why colour of KMNO4dissappear when oxalic acid is added to its solution in acidic medium?

Q.9.Mention a chemical reaction involving a homogenous and hetrogenous catalyst.

Q.10.The conductivity of 0.20 M solution of KCl at 298 K is 0.025 S cm-1. Calculate its molar conductivity.

Q.11 What is Van’t Hoff factor? How it is related to degree of dissociation of an electrolyte? A 0.5 % aqueous sol of KCl was found to freeze at -0.240celcius.Find theVan’t Hoff factor and degree of dissociation of the solute at this concentration (KF for water = 1.86 K KG/MOL)

Q.12. The rate constant for a reaction of zero order in A is 0.0030 mol L –1 s–1. How long

will it take for the initial concentration of A to fall from 0.10 M to 0.075 M ?

Q.13. 1) Identify and write the name of X,Y and Z in the fallowing reaction

C6H5N2Cl--CuCN--------🡪X-----H2O /H+--------🡪Y---------NH3---------🡪Z

2) How will u distinguish between the fallowing

a) Ethyl amine and Diethy amine

b) Ethyl amine and Acetamide

Q.14. Give reason for the fallowing

a)The air became dry when passed over silica gel.

b) Collidal medicine are more effective in the treatment of diseases.

c) Phosphorus doppped silicone is a semiconductor.

Q.15. State reasons for each of the following:

(i) The N – O bond in NO2- is shorter than the N – O bond in NO3- .

(ii) SF6 is kinetically an inert substance.

Q.16. Explain the following giving one example for each:

(i) Reimer-Tiemann reaction.

(ii) Friedel Craft's acetylation of anisole.

.17. How would you obtain

(i) Picric acid (2, 4, 6-trinitrophenol) from phenol,

(ii) 2-Methylpropene from 2-methylpropanol

Q.18. What is essentially the difference between α-form of glucose and β-form of glucose? Explain

Q.19.Silver crystallizes in face-centered cubic unit cell. Each side of this unit cell has a length of 400 pm. Calculate the radius of the silver atom. (Assume the atoms just touch each other on the diagonal across the face of the unit cell. That is each face atom is touching the four comer atoms.)

Q.20 Nitrogen pentoxide decomposes according to equation: 2N2O5(g) -----🡪

4 NO2(g) + O2(g).

This first order reaction was allowed to proceed at 40 °C and the data below were collected:

|  |  |
| --- | --- |
| [N2O5] (M) | Time (min) |
|  |  |
| 0.400 | 0.00 |
| 0.289 | 20.0 |
| 0.209 | 40.0 |
| 0.151 | 60.0 |
| 0.109 | 80.0 |
|  |  |

1. Calculate the rate constant. Include units with your answer.
2. What will be the concentration of N2O5 after 100 minutes?

Calculate the initial rate of reaction

|  |  |  |
| --- | --- | --- |
| Q.21 | Name the chief ore of silver. Describe with chemical equations the extraction of silver from | |
| this ore. | |  |

Q.22 Complete the following chemical equations:

* + 1. XeF6 +2H2O----🡪
    2. Cu2+ (aq) + I– (aq) 
    3. KNO3 + FeSO4 +H2SO4(conc.)-----🡪

Q.23 My father is a diabetic but is fond of cold drinks which have sugar content in it .Doctor advised ;me to give him low calorie drinks and I follow doctor so the diabeties of my father is under controlled.

(i)What is the advantage of taking low calorie drinks.

(ii)Give names of two preservatives used in soft drinks

(iii)Write the value associated with the author of paragraph

Q.24(i) Write the mechanism of nucleophilic attack on the carbonyl group of an aldehyde or a

Ketone.

(ii) An Organic compound A on treatment with acetic acid in the presence of sulphuric acid produces an ester B

A on mild oxidation gives C. C with 50% KOH followed by aacidification with dilHCl generates A and D. D with PCl5 followed by reaction with NH3 gives E.E on dehydration produces HCN. Identify A to E

Q.25 (i) Account for the following

(a) In the first transition series only copper has positive electrode potential

(b) Europium(II) is more stable than cerium(II)

(c)Actinoids show irregularities in the electronic configuration

(ii) Which is the last element in the series of actinoids ?Write electronic configuration of this element. What is the possible oxidation state of this element

Q.26(i) How is sulphur dioxide prepared in the (a)laboratory (b) industry

(ii)What happens when sulphur dioxide is passed through water and react with sodium hydroxide?Write the balanced equation

(iii)SO2 can act in both way oxidising agent and reducing agent but H2S is only which acts as reducing agents Give reason. Why?