**SHAH ABDUL LATIF UNIVERSTY KHAIRPUR**

**DEPARTMENT OF CHEMISTRY**

**(Section Inorganic Chemistry)**

**Subject:**Practical Written Test Class: B.S (IV) M. Sc (Final)

**Semester:**2ndTest Final

**Session:** 2013 Date: 27-02 2014

**Maximum MarksTime allowed:** 1½hr

**Q. No. 1** (a) Prepare 100mls of 0.1N solution of H2SO4 when the % Purity of given solution is 96 and density is 1.8

(b)determine the amount of KCl for the preparation of 100mls 1000ppm of KCl when the atomic weight of K= 39 and Cl= 35.5

**Q. No. 2** How you will prepare 100mls of 1M solution of CaCl2 and from that solution 500mls of 0.1N solution of that solution. The atomic weights are Fe = 56, S = 32, O = 16,

**Q. No. 3** Fill in the blanks

 (i) Basic solution is that whose pH is ----------------------------------------------

(ii) Gram equivalent weight of CaCO3 is ------------------------------------ When At. Wt. of Ca =40, O= 16

 (iii) Molar mass of 5 grams of NaCl is ------------------------------------------------

(iv) Reagent which is used for Gravimetric determination of Cl-1 ions in given solution is ---------------------

(v) The structural formula for EDTA is --------------------------------------------------------------------------------------------------------------------------------------------

(vi) Strong electrolytes are those which ---------------------------------------------------------------------------------------------------------------------------------------

1. For determination of hardness of water samples --------------------------------- --------------------------------------------------------------Equation is used
2. When the [H+] concentration is 0.001N the pH of that solution will be ----------------------------------------------------------------
3. Hardness of water is due to presence of cations --------------------------------------
4. For determination of SO4-2 ions in water samples gravimetrically ----------------------------------------reagent is used

**Q. No. 4** Define the following Terms

(i) Mole (ii) Solubility(iii) Chelation (iv) Titration (v) Primary and secondary standards (vi) Masking agents (vii) Supersaturated solution (viii) Perciptation (ivx) Recrystallization (x) Distilation

**Q. No. 5** Write theory procedure observation and calculation for given object

**Object**Prepare 0.01M solution of EDTA and determine the hardness of tape water by using that solution

**THE END**

**SHAH ABDUL LATIF UNIVERSITY KHAIRPUR**

**DEPARTMENT OF CHEMISTRY**

**Subject:** Inorganic chemistry(Practical)Class: B.S.III / M. Sc. (Previous)

**Semester:**2nd Test: Final

**Session:** 2012 Date: 06- 05-2013

**Maximum Marks**--Time allowed: 1hr

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Q. No. 1 (i) Determine the amount of H2C2O4 for the preparation of 100mls of 0.2M solution

 (ii) Prepare 10% solution of BaCl2

(iii)Prepare 100mls of 0.1 solution of HCl when the % purity of the acid is 85 and density is 1.5

Q. No. 2 Write IUPAC name of following compounds

 (i) H2SO3 (ii) HClO4 (iii) NH4NO2  (iii) (iv) Hg2O (v) FeNH4SO4

Q. No. 3 Explain the following

 (i) Why indicator is not used in KMnO4 titration

 (ii) Why BaCl2 is used in SO4-2 ion determination

1. Why PPt is ignited in gravemetric analysis
2. Why HCl is titrated with NaOH
3. Why pH is less when [H+] is high

Q. No. 4 Define the following

(i) Solubility (ii) Normality (ii) Neutralization reaction (iii) Redox reaction (iv) Oxidizing agent (v) Saturated solution (vi) Hygroscopic substances (vii) Acidic salts (viii) Precipitation reaction (ivx) Gravimetric analysis (x) Arrhenius acid

Q. No. 5. Write theory with balanced chemical equation, procedure, observation and calculation of following objectDetermine the amount of KMnO4 in given solution by titrating with 0.1N solution of ferrous sulfates.

Subject: Inorganic chemistry (Practical) Class: M.S

Semester: 1st Test Final

Session: 2011 Date 20- 04 - 2012

Maximum Marks 50 Time allowed: 30min

Name --------------------------- Seat No -----------------------------

Fil in the blanks

1. Amount required for preparation of 100mls of 0.01N solution of Na2C2O4 is-----------------------------------------------------
2. When 4.5g of ofNaOH is dissolved in litre of solution the concentration of that solution will be---------------------------------------------------
3. When the H+ concentration of solution is 1x10-2 pH of that solution will be -------
4. ----------------------------- Amount is required for preparation of 100mls of 100ppm solution of NaCl
5. Unknown concentration of samples can be determined by comparing their strength with --------------------------------------------------
6. The volume required for preparation 100mls of 0.05N and 0.1N solution from 1M solution is------------------------------------------------
7. % Yield can be calculated by formula----------------------------------------------------------
8. Compounds can be characterized by using UV/Vis spectrophotometer by determining their--------------------------------------------
9. -------------------------- is used as source of electromagnetic radiations in IR region
10. Maximum absorbance of KMnO4 is -------------------------------------------
11. When concentration is increased the transmittance will---------------------------------------------(decrease, Increase, not changed)
12. In NMR spectrophotometer frequency remains constant -------------------------------------------is variable
13. The normality of H2SO4 is -----------when its % purity is 96 and density is 1.6
14. --------------------volume is required for preparation of 0.2molar solution from their concentrated 12M solution
15. Lambert beer’s law may be defined as-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
16. Precipitation may be defined as -----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
17. Crystilization is defined as --------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

**Write theory and procedure**

**Object:**Prepare 10ppm solution of KMnO4 and determine its λmax of using spectronic-20 spectrophotometer

**Subject:**Practical Written Test Class: B.S (IV) M. Sc (Final)

**Semester:**2ndTest Final

**Session:** 2012 Date: 02-05 2012

**Maximum Marks**40**Time allowed:** 1hr

**Q. No. 1** (a) Prepare 100mls of 0.1N solution of H2SO4 when the % Purity of given solution is 96 and density is 1.8

(b)determine the amount of KCl for the preparation of 100mls 1000ppm o**f** KCl when the atomic weight of K= 39 and Cl= 35.5

**Q. No. 2** Fill in the blanks

 (i) Acidic solution is that whose pH is ----------------------------------------------

(ii) Gram equivalent weight of CaCO3 is ------------------------------------ When At. Wt. of Ca =40, O= 16

(iv) Molar mass of 12 grams of NaCl is ------------------------------------------------

(v) The reagent which is used for Gravimetric determination of Cl-1 ions in given solution is ---------------------

(VI) The structural formula of sulfuric acid is --------------------------------------------------------------------------------------------------------------------------------------------

1. Strong electrolytes are those which ----------------------------------------------------------------------------------------------------------
2. High conductivity of water is due to the presence of high concentration of ------------------------------------------------------------------------------------
3. For the determination of Al3+ ions in solution ---------------------------- reagent is used
4. In paper chromatography ------------------------- is used as stationary phase and -------------------- is used ---------------------------is mobile phase

**Q. No. 3** Define the following Terms

(i) Solubility (ii) Masking agent (iii) Chelation (iv) Titration (v) Primary and secondary standards (vi) Calibration curve (vii) Concentration (viii) Solvent extraction (ivx) Analytical reagent (x) Spectroscopy

**Q. No. 5** Write theory procedure observation and calculation for given object

**Object:-** Determine the alkalinity of water sample by titration method and amount of SO4-2 ions by gravimetric method**THE END.**