Answer the following question:

Write what you know about the following:

1. Biotic components of an ecosystem ? (15 mark)

2.   Describe the factors influencing Environments and habitats? (10 mark)

3. Write short notice about the Environmental factors   ? (10 mark)

Academic year: 2nd Year
Programme: Chem-Geology
Date: 12 / 01 / 2012
Total assessment mark: **35**

جامعة الفيوم
Fayoum University
كلية العلوم

Department: Chemistry
Subject Title & code: Anal. Chem. (1)
Time allowed: 2 hours
No. of pages: (1)

Question (1).   **(15 Points)**

(A) What is meant by titration curve? Distinguish between neutralization, reduction-oxidation and precipitation titration curves.

(B) Differentiate between iodimetry and iodometry.

(C) Ferric alum is added in titration of halides and SCN⁻ by Volhard method. Why?

(D) Calculate the weight of Na_2SO_4 needed to prepare 300 mL solution with 0.23 N concentration.

Question (2).   **(10 Points)**

(A) The color-change interval for neutralization indicator is $pH=pK_{in} \pm 1$. Explain Why?

(B) Why the equivalent weight of $K_2Cr_2O_7$ one-six molecular its weight in acidic medium?

(C) Compare between potassium permanganate and dichromate as oxidizing agents.

Question (3).   **(10 Points)**

(A) Comment on the following:-

    i) The pH of ammonium chloride solution is less than 7.0.

    ii) Excess potassium iodide is added in iodometric determination of copper.

(B) Calculate the pH for mixture of 6.0 mL, 0.2 M acetic acid (Ka 1.8×10^{-5}) and 4.0 mL, 0.2 M sod. acetate.

Exam Ends Here

At. Wt.   Na=23, H=1, C=12, O=16, S=32, N=14

Question I.   (10 Points)

Distinguish between each pair of the following (Give an example):-

i-A primary standard and secondary standard solutions.

ii-One normal and one molar sodium carbonate solutions.

iii-A strong electrolyte and a weak electrolyte

iv-Oxidation-reduction and metathesis reactions.

Question II   (10 Points)

Derive a curve for the titration of 50 mL of 0.1 M HCl with 0.1 M NaOH.

Question III   (10 Points)

A)-Describe the preparation of 3 L of 0.1 normal Na_2CO_3 solution.

(B) Give reason(s):

i-The usefulness of EDTA as titrant for metal ions.

ii-Addition of dextrin in titration of chloride by Fajan's method.

iii-Water is not recommended washing solvent for precipiates.

Question IV   (10 Points)

Compare between each pair of the following:

i-co-precipitation and post precipitation with examples.

ii- Drying and ignition of precipitates.

PTO ⟶