**Q1**.Define the following terms

1.Solutions, 2.Analytes, 3.P-function ,4.Mole fraction, 5. gas 6.Heterogeneous mixture

**Q2/A-** Choose the right answer for each of the following questions

1)……………… is a substance that can not be separated into simpler substances by chemical means.

**a) atom b)** pure substance **c)** compound **d)** element

2) ……………….Wet chemical methods such as precipitation, extraction, distillation, boiling or melting points, gravimetric and titrimetric measurements.

**a) instrumental methods b)** Classical Methods **c)**Analytical measurements

3- An example of homogenous solution is …………..

**a) coal b)** orange juice **c)**sugar dissolved in water **d)**both a&b

4) The …………….. is fundamental unit describing the amount of chemical species.

**a) molality b)** molarity **c)**molecular weight **d)**mole

5)-----------------The smallest unit of an element that retains a substance chemical activities :a)compound b)atoms c)matter d)non of them

**B**/ In our glass of iced tea we have added 2 tea spoon of sugar( C12H22O11 m.wt:342) the volume of the tea(water) is 300ml ,what is the mole fraction of the sugar in the tea solution ?(1tsp sugar are 20g) (

**Q3. Give brief answers (**

**A)**What is the difference between elements and compounds?

B)Define acid &base according to the Lewis theory

C)Compare between strong and weak electrolyte

**Q4.** Answer the following questions:

**A)** Determine the molality ofa solution containing 7.4 g of ethylene glycol, HOCH2CHOH, dissolved in 125g of water.

**B)** Calculate the molar concentration of ethanol in an aqueous solution that contains 5.2 g of C2H5OH (46.07 g/mol) in 1000 mL of solution

**C)** What is the concentrati

B- How many mililieters of 6M are needed to prepare 500ml of 2M NaOH?(10marks)

**C)** What is the concentraton iin %v/v of a solution containing 2500 mL of methanol lin 5000 m lof solution?

(The atomic weights (g/mol):, O=16, C=12, H=1