**4th Stage Students**

**Food Analysis/ practical**

**1:30 hour**

**Salahaddin University - Erbil**

**College of Agriculture**

**Food Technology**



**Q1**/ **What are two major types of analysis and what is the deference between them**?

**Q2/** **Calculate the Standard Deviation of Percent Moisture in Egg white.**

|  |  |
| --- | --- |
| Measurement | Observed % moisture |
| 1 | 84.93 |
| 2 | 88.45 |
| 3 | 85.90 |
| 4 | 86.78 |

Q3/ Define the following:- 1. Standard solution 2. Food acidity

3. Formulated acid food

**Q3/Prepare 0.5M of HCl if you know { sp.g 17, 33% } of bottle.**

**(H=1, Cl=35)**

Q4/ What are the disadvantages of titration method for monosaccharaides and oligosaccharides?

**Q5/Explain Chromatographic Methods for determination of total sugar.**

**Q6/ Draw the schematic diagram of spectrophotometer.**

**4th Stage Students**

**Food Analysis/ practical**

**1hour**

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**Q1/ Explain Protein determination by Kjeldahl method.**

Q2/ What are types of Food Starches?

Q3/ Define the following:- 1. Liquid-Liquid Extraction 2. Lowry method

3.Liquid – Solid systems for extraction

**Q4/** A oil is to be removed from a chips sample by an ether extraction. Three (50ml) extractions are recommended to remove 0.5 g of fat from 5 g of meat dispersed in 50 ml of water. Assume D is equal 2 which is best to do ? One 150 ml ether extraction or three 50 ml ether extraction?

Q5/ What are Conditions of a choice of solvent which is used in extraction?

**Q6/Explain why it is important to be able to accurately determine the total fat content of foods.**



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**2nd Stage Students**

**Physical chemistry / practical**

**1 hour**

**Q1/** what are Factors influencing viscosity?

**Q2/** The densities of acetone and water at 20◦C are 0.792 and 0.9982 gm/cm3, respectively. The viscosity of water is 1.005 x 10-2 poise at 20◦C. If water requires 120.5 sec to run between the marks on a viscometer and acetone requires 49.5 sec, what is the viscosity of acetone?

**Q3/** Define PH and what are the reasons for measuring pH in food processing?

**Q4/** Define the relative density. Then show how you can measure density a liquid in laboratory, with equation.

**Q5/** The viscosities of acetone are:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| T ◦C | 5 | 15 | 25 | 35 |
| η | 0.932 | 0.596 | 0.417 | 0.295 |

By plotting **log η** versus **(1/T)** ◦C, determine the value of **E** from the slope if R is (0.468) .

**Good luck**



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**2nd Stage Students**

**Physical chemistry / practical**

**1 hour**

**Q1/** When 30 ml of benzoic acid tittered with sodium hydroxide (0.1 N NaOH) and required 37 ml of NaOH solution to rich the end point Calculate the concentration of benzoic acid solution.

**Q2/Define the following:**

1. Recrystallization 2- Anti-freeze solution

3- Thermo chemistry 4-Heat of dissolution.

**Q3/** An aqueous solution contained (5.5 gm.) substance, (77 ml) water and the ΔTf =0.4◦C. Calculate the molecular weight for this substance, if you know the Kf for water equal to (1.86 molal/◦C)

**Q4/**

1. The system which contains the calorimetric materials and the physio-chemical reaction is called -------------- (calorimeter, calorimetry, heat reaction).
2. ---------------is required to break the bonds holding the molecules in the solid together (Electric, Heat, Energy).
3. Solution has a------------freezing point than a pure solvent.

( higher, equal, lower).

1. ---------------properties include vapor pressure lowering, boiling point elevation, freezing point depression and changes in osmotic pressure.( Molecular, Colligative, Particle) .
2. ----------is the change in the temperature system, when a1 mole of solid solute dissolved in a large volume of solvent (ΔT, ΔH, Q ).

**Good luck**