CORK INSTITUTE OF TECHNOLOGY
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ

Semester 2 Examinations 2008/09

Module : Nutritional Analysis

Module Code: **BIOL7018**

School: Biological Sciences

Programme Title: **B.Sc. (Hons) in Herbal Science**

Programme Code: **SHERB_8_Y2**

External Examiner(s): **Prof. Elizabeth Williamson, Dr. Dilis Clare**
Internal Examiner(s): **Dr Germain Levieille**

Instructions: **Answer THREE Questions.**
Each question carries a equal mark weighing.

Duration: 2 Hours

Sitting: Summer 2009

Requirements for this examination: Calculator

Note to Candidates: Please check the Programme Title and the Module Title to ensure that you have received the correct examination paper.
If in doubt please contact an Invigilator.

Q1 Describe and discuss health implications of 3 examples of the main nutritional disorders.

Q2. Discuss the process of oxidation of lipids. Why should lipid oxidation be avoided? What are the contributing factors and how to prevent lipid oxidation?

Q3. Describe the 4 levels of protein structures. What is protein denaturation and its main causes? How does protein denaturation affect nutritional value of food?

Q4. A Biuret reaction experiment has been conducted using BSA (Bovine Serum Albumin) to obtain a standard curve and you have obtain the following results:

Conc. of BSA mg/ml	0	1	2	3	4	5	6
Abs 540nm	0	0.5342	1.0582	1.5925	2.1452	2.452	2.784

You tested the concentration of protein in a number of beers and obtain the following data:
Beer 1 after dilution at 1/20: Abs_{540nm}=1.342
Beer 2 after dilution at 1/20: Abs_{540nm}=0.782
Beer 3 after dilution at 1/20: Abs_{540nm}=0.1275

What are the concentrations of protein of these beers? Detail your calculations.

Q5. Please give a definition of these terms: Protein Efficiency Ratio (PER), Biological Value (BV), Net Protein Utilization (NPU), and describe how they are measured and how they relate to each other.