

**CORK INSTITUTE OF TECHNOLOGY  
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ**

**Autumn Examinations 2011/12**

**Module Title: Clinical Biochemistry CA**

**Module Code: BIOL7007**

**School: Science**

**Programme Title: Bachelor of Science (Honours) in Biomedical Science – Year 2  
Bachelor of Science (Honours) in Nutrition and Health Science - Year 2**

**Programme Code: SBISC\_8\_Y2  
SNHSC\_8\_Y2**

**External Examiner(s): Prof. Richard O’Kennedy / Dr Alison Gallagher  
Internal Examiner(s): Dr. Brendan O’Connell**

**Instructions: Answer question 1 AND 3 other questions**

**Duration: 2 hours**

**Sitting: Autumn 2012**

**Requirements for this examination:**

**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.Compulsory**

Answer 8 of the following:

(40 marks)

- (a) Describe how the serum activity of alkaline phosphatase can be established
- (b) Describe the methods employed to measure serum glucose concentration.
- (c) Outline the hormones involved in regulating blood glucose concentrations.
- (d) Discuss the clinical significance of a raised serum alkaline phosphatase level.
- (e) Outline the functions of the liver.
- (f) Outline the methods employed to measure serum urea levels.
- (g) Describe the clinical significance of a raised serum aspartate transaminase level.
- (h) Write a short note on the units of enzyme activity.
- (i) Write a short note on Diabetes Mellitus.
- (j) Write a short note on Acute Liver Failure

(8 x 5 marks)

- Q2. (a) Describe the major hormones of the hypothalamus and the pituitary (8 marks)  
(b) Discuss the endocrinology of the thyroid with emphasis given to hypo- and hyperfunction. (12 marks)
- Q3. Discuss the different types of acid base disturbances under the following headings:  
(a) Etiology (8 marks)  
(b) Laboratory Findings (6 marks)  
(c) Compensatory Mechanisms (6 marks)
- Q4. (a) Outline the functions of calcium in the body. (6 marks)  
(b) Describe the factors that affect the absorption of calcium in the GIT. (6 marks)  
(c) Discuss the regulation of serum calcium levels. (8 marks)
- Q5. (a) Describe the functions of plasma proteins (6 marks)  
(b) Outline the methods employed to measure serum protein concentration (6 marks)  
(c) Discuss the disorders of immunoglobulin synthesis (8 marks)