

**CORK INSTITUTE OF TECHNOLOGY
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ**

Autumn Examinations 2012

Module Code: Introductory Cell Biology (CA)

Module Code: BIOL6023

School: Science

Programme Title: Bachelor of Science in Applied Biosciences & Biotechnology – Year 2

Programme Code: SBIOS_7_Y2

External Examiner(s): Dr Don Faller

Internal Examiner(s): Dr Helen O Shea

Instructions: **Answer 3 Questions. Question 1 is compulsory.
Answer any 2 questions from section A**

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.

Question 1 is Compulsory

- Q1. (i) Write a brief note on the use of the haemocytometer.
- (ii) You have counted cells using a haemocytometer and have a total of 30 cells in 16 squares. In order to obtain this count, you diluted the cells by a factor of 10. The conversion factor for your counting chamber is 10^4 . The total volume of cell suspension is 50 mls.

Calculate

- (a) The number of cells per ml.
- (b) The total number of cells in the cell suspension.
- (iii) Write notes on cell culture.
- (iv) What is Immunological Memory?
- (v) Outline, using a diagram, how hydrophobic hormones act in the target cell.
- (vi) What are Oncogenes?
- (vii) Discuss how antibodies are manufactured?
- (viii) What are the three domains of life ?
- (ix) Why are parasitic diseases important?
- (x) What is Gene Therapy?

(Question 1 = 50 marks)

Section A

Answer two questions from this section. Each question carries 25 marks.

- Q2. Discuss, with the aid of diagrams, Immunoglobulin molecules.
- Q3. Write an essay on cancer.
- Q4. Discuss, using examples, parasitic diseases.
- Q5. Write an essay on AIDS.