

# Cork Institute of Technology

## Higher Certificate in Science in Applied BioSciences – Award

(NFQ Level 6)

Summer 2007

### Cell Biology

(Time: 2 hours)

Answer Question 1 and two others  
from Section A.

Examiners : Dr. H. O'Shea  
Dr. T. Beresford

Use separate answer books for each section.

- Q1. (a) Write a brief note on the use of the haemocytometer.
- (b) 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 40 mls.
- Calculate:
- (i) The number of cells per ml.
  - (ii) The total number of cells in the cell suspension.
- (c) Write notes on cell culture.
- (d) What is Immunological Memory?
- (e) Draw a diagram of the cell cycle.
- (f) What are Oncogenes ?
- (g) Outline, using a diagram, how hydrophobic hormones act in the target cell.
- (h) Outline, using a diagram, the five-kingdom system of classification.
- (i) Why are parasitic diseases important?
- (j) What is Gene Therapy?

(Question 1 = 40 marks)

## Section A (Cell Biology)

**Answer at least two questions from this section. Each question carries 30 marks.**

- Q2. Discuss specific immunity.
- Q3. Describe the development of the early embryo, up to, and including, gastrulation.
- Q4. Discuss, using examples, parasitic diseases.