

Cork Institute of Technology  
Bachelor of Science in Applied Biosciences – Stage 2  
(SBIOS\_7\_Y2)  
Summer 2008  
**CELL BIOLOGY**  
(Time: 2 hours)

Answer Question 1 and two others  
from sections A

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Use separate answer books for each section.

- 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 20. The conversion factor for your counting chamber is  $10^4$ . The total volume of cell suspension is 20 mls.
- Calculate;
- (a) The number of cells per ml.
- (b) The total number of cells in the cell suspension.
- (iii) Describe how to pass cells in the laboratory.
- (iv) What is Immunological Memory?
- (v) Draw a diagram of the cell cycle.
- (vi) What are Tumour Suppressor Genes ?
- (vii) Outline, using a diagram, how HIV replicates.
- (viii) Describe, using a diagram, how cAMP acts as a second messenger in a cell.
- (ix) Why are parasitic diseases important?
- (x) What is Gene Therapy?

(Question 1 = 50 marks)

## Section A (Cell Biology)

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

Q. 2. Discuss, with the aid of diagrams, Immunoglobulin molecules.

Q. 3. Write an essay on Cancer.

Q. 4. Discuss, using examples, parasitic diseases.

Q. 5. Write an essay on AIDS.