

Cork Institute of Technology

Higher Certificate in Science in Applied BioSciences – Award

(NFQ Level 6)

Autumn 2007

Cell Biology

(Time: 2 hours)

Answer Question 1 and two others
from Section A.

Examiners : Dr. H. O'Shea
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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 40 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 30 mls.
- Calculate
- (a) The number of cells per ml.
- (b) The total number of cells in the cell suspension.
- (iii) Discuss the components used to make 'BHK medium'.
- (iv) Discuss the cells involved in the non-specific immune response.
- (v) Draw a diagram of the cell cycle.
- (vi) What are Tumour Suppressor Genes?
- (vii) Outline, using a diagram, how hydrophobic hormones act in the target cell.
- (viii) What are the three domains of life?
- (ix) Why are parasitic diseases important?
- (x) Discuss general control measures against HIV infection.

(Question 1 = 40 marks)

Section A (Cell Biology)

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

- Q2. Discuss, with the aid of diagrams, Immunoglobulin molecules.
- Q3. Describe the development of the early embryo, up to, and including, gastrulation.
- Q4. Write an essay on AIDS.