

Cork Institute of Technology
Bachelor of Science in Cell and Molecular Biology – Award
(National Diploma in Science in Cell and Molecular Biology – Award)
(NFQ – Level 7)
April 2005
Cell Biology
(Time: 3 Hours)

Answer FOUR questions.
Question 1 is compulsory.
Answer THREE others, availing of the internal
choices provided.

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

- Q1. (i) Outline (using a diagram), how all organisms are classified by cell structure, listing the fundamental differences observed between different cells.
- (ii) Write notes on the Golgi apparatus.
- (iii) Write notes on the use and formulation of chemically defined cell culture media.
- (iv) Outline, with the aid of a diagram, the principles involved in the production and selection of a monoclonal antibody-secreting hybridoma cell line.
- (v) Outline how the complement cascade functions.
- (vi) Discuss specific immunity with reference to measles virus infection.
- (vii) Give a brief account of the structure and role of the thymus.
- (viii) Discuss the Major Histocompatibility Complex (MHC).
- (ix) Outline how benign neoplasms cause disease.
- (x) Discuss anti-viral chemotherapy. (40 marks)
- Q2. (a) Discuss, with the aid of diagrams, the structure and function of antibodies.
Comment on antibody diversity.
- OR**
- (b) Discuss, using examples, how different viruses replicate and release new viral progeny. (20 marks)

Q3. (a) Describe [using a diagram(s)], the stages in the development of invasive carcinoma of the cervix.

OR

(b) Comment on the macroscopic and microscopic appearance of malignant neoplasms and outline how they cause disease and death.

(20 marks)

Q4. (a) Discuss how cells respond to external stimuli.

OR

(b) Discuss the cells and tissues of the Acquired Immune System.

(20 marks)