

*National University of Ireland, Galway*

**Element of Pathology (PA 405)**

**Bioengineering Faculty**

Professor C.E. Connolly  
Professor T. O'Brien  
Professor M. Cormican  
Dr. G. Mortimer  
Dr. H. Grimes

Dr. F. Bennani  
Dr. M. O'Dwyer

Time allowed: Two hours

Answer **FOUR** questions. Use **separate answer books** for each question.

1. What is a Carcinogen? How does it act? Give an example of a Carcinogen you feel is important in the construction industry and why?
2. Write notes on "means of gene delivery to tissue".
3. Discuss infection associated with medical devices, including prevention of device related infection.
4. Write brief notes on each of **three** of the following:-
  - (a) Anaphylaxis
  - (b) Opsonization
  - (c) Granuloma
  - (d) Aschoff nodule

Illustrate your answers where appropriate with examples.

5. Discuss the requirements that would determine the suitability of an instrument/analyser for a busy, high throughput subsection in a clinical biochemistry laboratory.
6. Discuss the causes of delayed wound healing.
7. Discuss the role of immunophenotyping and flow cytometry in the Diagnosis of acute Leukaemia.