

NATIONAL UNIVERSITY OF IRELAND, GALWAY  
Ollscoil na hÉireann, Gaillimh

3<sup>rd</sup> Year Biomedical Engineering, Autumn 2002  
3<sup>rd</sup> Year Industrial Engineering, Autumn 2002

### AN305 HUMAN STRUCTURE

Dr. S. McDonald  
Mr. A. Black

**Time: Three Hours**

The examination consists of **TWO** sections

Answer **THREE** questions from Section A and **THREE** questions from Section B

#### **SECTION A**

Answer **THREE** questions in this section

**Allow approximately 1 hour 30 minutes for this section**

1. Write an essay on the cell membrane.
2. Write an essay on embolus formation.
3. Using both gross anatomical and histological evidence, outline the considerations needed to develop a viable replacement organ.
4. Write an essay on epithelium.
5. Write an essay on the gross anatomy of the heart – include notes on the microscopic anatomy of veins and arteries.

#### **SECTION B**

Answer **THREE** questions in this section

**Allow approximately 1 hour 30 minutes for this section**

1. Write an essay comparing the anatomical hip joint with modern prosthetic hip joints.
2. Write an essay on the anatomy of the vertebral column.
3. Write an essay on either the male or the female reproductive system.
4. Discuss the following statement. 'The human body can be regarded as being a collection of complex tubes.'
5. Describe the methodology behind tissue-engineered constructs.