

AUTUMN EXAMINATIONS 2001

FIRST MEDICAL EXAMINATION

HUMAN BIOLOGY II

EXTERN EXAMINER

INTERN EXAMINER Professor J A Houghton

Time allowed: Two hours

Use a separate Answer Book for each Section

SECTION A: GENETICS

ANSWER BOTH QUESTIONS

- (1) Write brief notes on two of the following:
 - (a) Sex linkage.
 - (b) Multifactorial (polygenic) inheritance.
 - (c) Mucopolysaccharidoses.
 - (d) Huntington's chorea.
 - (e) Gene Therapy

- (2) Write an essay on "Recessive Inheritance in Man". Include in your answer the applications of genetic engineering techniques to the diagnosis and treatment of inherited disorders

- 2 -

SECTION B: BIOCHEMISTRY

External Examiner:
Internal Examiner:

Dr. Iain Mowbray
Dr. Tadhg Griffin

ANSWER BOTH QUESTIONS

1. (a). Describe the four levels of protein structure.

or

(b). Write an essay on protein biosynthesis.

2. Answer **three** of the following:

- (i) Give an account of the general structure of membranes.
- (ii) Describe three differences between RNA and DNA
- (iii) Outline the metabolic stages in the generation of ATP from food.
- (iv) Write a short note on the catalytic properties of enzymes.
- (v) Describe how molecules cross the plasma membrane.
- (vi) Discuss briefly cellular dysfunction and the Cell Cycle.