

AUTUMN EXAMINATIONS 2002

FIRST MEDICAL EXAMINATION

HUMAN BIOLOGY II

EXTERN EXAMINER

INTERN EXAMINER Professor J A Houghton

SECTION A: GENETICS**ANSWER BOTH QUESTIONS**

(1) Write brief notes on two of the following:

- (a) Sex linkage.
- (b) Multifactorial (polygenic) inheritance.
- (c) Tay Sachs Disease (include in your answer a discussion of introns and exons)
- (d) Prader Willi and Angelman syndromes (include in your answer a discussion of genetic anticipation).

(2) Write brief notes on one of the following:

- (a) Autosomal Trisomy.
- (b) Structural Abnormalities of Human Chromosomes
- (c) Sex Chromosome Aneuploidy.

SECTION B: BIOCHEMISTRY

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Time allowed : Two hours

Use a separate Answer Book for each Section

Please note Section A is Genetics

SECTION B: BIOCHEMISTRY

External Examiner:

Dr. Iain Mowbray

Internal Examiner:

Dr. Tadhg Griffin

ANSWER BOTH QUESTIONS

1. (a). Explain how the genetic information encoded in DNA is translated into a protein sequence.

or

- (b). Outline the mechanisms by which molecules cross the plasma membrane.

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

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