

OLLSCOIL NA hÉIREANN, GAILLIMH  
NATIONAL UNIVERSITY OF IRELAND, GALWAY

**B.Sc. (General), Third Science and Third Biomedical Science  
Examination Semester 1 1999**

**PHYSIOLOGY (SI311, SI312)**

Time Allowed: 3 Hours

Examiners: Prof. McLoughlin, Prof. Kane, Dr. Doyle, Dr. Hynes

Please use a Separate Answer Book for Each Section

**SECTION A: NEUROPHYSIOLOGY (SI311)**

Answer THREE questions out of FOUR:

A1 Write short notes on two of the following:

- (a) General mechanism of action of G-protein coupled receptors
- (b) The sleep cycle and the EEG
- (c) Cerebrospinal fluid function and diagnostic importance.

A2 Write short notes on two of the following:

- (a) Dorsal column
- (b) Stretch reflex
- (c) Cerebellum structure.

A3 Write short notes on two of the following:

- (a) Neurons of the retina
- (b) Role of the cochlea in hearing
- (c) Role of the cerebral cortex in olfaction.

A4 Write short notes on two of the following:

- (a) Return of decreased body temperature to normal
- (b) Glutamate as a neurotransmitter
- (c) Action potential: draw the action potential and label the changes in ion conductance on the drawing.

**SECTION B: ENDOCRINOLOGY (SI 312)**

Answer THREE questions out of FOUR:

B1 Write an essay on the control of the anterior pituitary by the hypothalamus and how that control was elucidated.

B2 Discuss the role played by cortisol in stress.

B3 Describe the endocrine functions of the testes.

B4 Write short notes on three of the following:

- (a) Insulin
- (b) Adrenal medulla
- (c) Endocrine changes in the follicular phase of the menstrual cycle
- (d) Lipid metabolism.