

Ollscoil na hÉireann, Gaillimh  
National University of Ireland, Galway

GX 2541

Semester II Examinations, 2003/2004  
Front Page Template

Exam Code(s) 3BS9  
3BO2

Exam(s) 3<sup>rd</sup> Science  
3<sup>rd</sup> Biomedical Science

Module Code(s) SI314  
SI316

Module(s) Physiology

Paper No. ....

Repeat Paper .....

External Examiner(s) Dr. D. Marples

Internal Examiner(s) Prof. M.T. Kane, Dr. K. Doyle

Dr. A. Henry, Dr. L. Quinlan

**Instructions:** Answer 3 questions out of 4 in each section  
Please Use Separate Answer Books For Each  
Section

Duration Three hours

No. of Answer books Two

**Requirements:** .....

Handout .....

MCQ .....

Statistical Tables .....

Graph Paper .....

Log Graph Paper .....

Other Material .....

No. of Pages .....

Department(s) Physiology

Gx254

OLLSCOIL NA hÉIREANN, GAILLIMH  
NATIONAL UNIVERSITY OF IRELAND, GALWAY

B.Sc. (General), Third Science and Third Biomedical Science Examination

Semester II, Summer 2004

PHYSIOLOGY

**Time Allowed:** Three hours

**Examiners:** Dr D. Marples, Prof. M Kane, Dr. K Doyle,  
Dr L Quinlan and Dr A Henry

**Please Use Separate Answer Books For Each Section**

**SECTION A** **Cell Physiology SI316**  
Answer **THREE** Questions out of **FOUR**

- A1** Discuss how the experiments of Hodgkin and Huxley contributed to our understanding of the basis of the action potential.
- A2** Discuss the role of cellular junctions in the formation of a polarised functioning epithelium.
- A3** Give two or three important examples of sodium-dependent active transport, describe the process for either an antiport or a symport system and give the fundamental rule (equation) of transport for such a system.
- A4** Describe the processes whereby sodium ion is absorbed in the proximal tubule in the kidney

**SECTION B:** **Integrative Physiology SI314**

Answer **THREE** Questions out of **FOUR**:

- B5** Discuss the role of the kidneys in acid base balance.
- B6** Write an essay on the control of respiration.
- B7** Carbohydrates, lipids and proteins are important energy sources within the body. Discuss this statement.  
or  
Discuss the pathophysiology of stroke.
- B8** Write an essay on shock including its definition and classification, and compensatory reactions involved.