

Ollscoil na hÉireann, Gaillimh GX_____
 National University of Ireland, Galway

Semester II Examinations, 2004/2005
Front Page Template

Exam Code(s)	4BS2
Exam(s)	4 th Science
Module Code(s)	SI405
Module(s)	Physiology
Paper No.	IV
Repeat Paper	Special Paper
External Examiner(s)	Dr. A.R. Noble
Internal Examiner(s)	Prof. M. Kane, Dr. A. Henry Dr. K. Doyle, Dr. L. Quinlan, Dr A. Hynes

Instructions: Answer **FOUR** Questions.
 Students must attempt **One** Question from Each Section.
 Use a Separate Answer Book for each section.

Duration	Three hours
No. of Answer books	Four

Requirements:

Handout
MCQ
Statistical Tables
Graph Paper
Log Graph Paper
Other Material

No. of Pages
Department(s)	Physiology

OLLSCOIL NA hÉIREANN, GAILLIMH
NATIONAL UNIVERSITY OF IRELAND, GALWAY

Semester II, Summer 2005

B.Sc. (Hons.)

PHYSIOLOGY

Paper IV

Examiners Dr A.R. Noble, Dr. A. Henry, Dr. K. Doyle, Dr. L. Quinlan, Dr A. Hynes

Answer **FOUR** Questions.

Students **MUST** attempt **One Question from Each Section**.

Use a **Separate Answer Book** for each section.

Time Allowed Three Hours

Section A Pathophysiology

- A1** Write an essay on the normal carriage of lipids in the blood and the pathophysiology of atherosclerosis.
- A2** Write an essay on lactate threshold including lactate production, factors affecting blood concentration and clearance as well as the effects of acute exercise and endurance training on lactate threshold.

Section B Neuroscience Research

- B1** 'Long term potentiation and NMDA receptor activity in the hippocampus are necessary for spatial learning.' Discuss this statement.
- B2** Discuss the role of glia in synaptogenesis and synapse maintenance.

Section C Electrophysiology

- C1** What equation best describes the ionic basis for the cell resting membrane potential? Discuss its derivation.
- C2** Give an overview of the patch clamp technique and detail how it could be used

to measure the properties of either voltage gated potassium or sodium channels. Clearly show the properties of your chosen channel type.

Section D Immunity

- D1** Discuss the methodologies involved in the production of antibodies in the laboratory and the use of antibodies in immunohistochemistry using light microscopy.
- D2** Write an essay on the cell mediated immune response; include in your discussion examples of experimental models that have been used to study this response.