

GX1890

OLLSCOIL NA hÉIREANN, GAILLIMH
NATIONAL UNIVERSITY OF IRELAND, GALWAY

2nd Science Examination
PHYSIOLOGY
Summer 2000

Professor J.V. McLoughlin
Professor M.T. Kane
Dr D. Colbert
Dr. A.C. Hynes
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Time Allowed: **Two** hours. Please use a **separate** Answer Book for each Section
Answer **all** sections

SECTION A (35%)

1. Write short (NOT more than about a page in length) **concise relevant** notes on **three** of the following:
 - (a) Using drawings, compare the action potentials in the sino-atrial node and in ventricular muscle. Explain clearly and concisely how the differences are caused.
 - (b) Describe the factors that influence venous return to the heart.
 - (c) Explain how just three factors **directly** affect arterial blood pressure.
 - (d) Describe the control of coronary muscle blood flow.

SECTION B (25%)

- 2 (a) What are the roles of the central and peripheral chemoreceptors in respiration?
How do both respond to a fall in PaO_2 ?
OR
(b) Describe the carriage of CO_2 in the blood.

SECTION C (20%)

3. (a) Write an essay on the role of bile in the digestion of fats
OR
(b) Write short notes on two of the following
 - (i) The functions of saliva
 - (ii) Absorption of glucose
 - (iii) Secretion of acid by the stomach.

SECTION D (20%)

- 4 (a) Discuss the role of the kidneys in the control of body pH
OR
(b) Write short notes on three of the following
 - (i) Glomerular Filtration
 - (ii) Renal counter-current mechanism
 - (iii) Renal blood flow
 - (iv) Renal clearance.