

OLLSCOIL NA hÉIREANN, GAILLIMH
NATIONAL UNIVERSITY OF IRELAND, GALWAY

Summer Examinations, 1998

B.Sc. (General) and Third Science Examination

PHYSIOLOGY (SI303, SI304)
SECOND PAPER,

Professor N.G. McHale
Professor M.T. Kane
Dr. D.S. Colbert
Dr. A.C. Hynes

Time Allowed: **Three hours.**

Answer two questions from Section A and three questions from Section B

Please use a separate Answer Book for each Section

SECTION A

1. Define the term 'renal clearance'. How can it be measured? What is its usefulness as an index of renal function.
2. How is the pH of the body regulated by the kidney?
3. Describe your understanding of membrane transport processes such as active transport (both primary and secondary), sodium-dependent transport and facilitated diffusion. Indicate their physiological importance

SECTION B

4. Define hypertension and indicate likely causes for this condition based on your knowledge of physiology
5. Describe the typical responses in the respiratory system to climbing a mountain such as Mount Everest (29,000 feet) by a lowlander (someone who normally resides at sea level).
6. Describe the ionic changes occurring during the action potential in the sino-atrial node and in ventricular muscle.
7. Write an essay on the cardiovascular and respiratory changes during exercise