

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

APPLIED PHYSICS DEPARTMENT

SRA 2206 – NEURO ENDOCRINE SYSTEM I

BSc HONOURS PART II: MAY 2006

DURATION 3 HOURS

ANSWER ALL PARTS OF SECTION A AND ANY THREE QUESTIONS IN SECTION B. SECTION A CARRIES 40 MARKS AND SECTION B CARRIES 60 MARKS.

SECTION A

1. (a) Diagram A is arrangement of cells in the islet of the pancreas. Identify and indicate what hormones are produced by 1-3. [3]
- (b) Diagram B is the arrangement of cells in the adrenal gland.
 - (i) Identify and indicate what hormones are produced by 2-5.
 - (ii) Briefly state the functions of the hormones you indicated to be produced by 2-5. [8]
- (c) Diagram C is the brain.
 - (i) Give names and briefly state functions of the nerves indicated by Roman Numerals.
 - (ii) Name structures I and II. [6]
- (d) Diagram D is cross section of an endocrine gland. Name it and the cells labelled 1 –3. Which cells produce hormones and what are the functions of these hormones? [5]
- (e) Diagram E is a neurone.
 - (i) What type of neurone is it?
 - (ii) Name and explain the functions of 1-4. [3]
- (f) Diagram F is a cross section of human ovary.
 - (i) Name the structures 1-7.
 - (ii) Name hormone producing areas and the functions of the hormones produced. [6]
- (g) Diagram G is part of the Organ of Corti.
 - (i) Name it and the parts labelled 1-5.
 - (ii) Briefly explain how it carries out its functions. [4]
- (h) Diagram H is cross section of the spinal cord and vertebrae. Name the parts indicated. [5]

SECTION B

1. Describe the anatomy of the eye including the cells that participate in visual perception and then explain how the visual cycle is accomplished. [20]
 2. (a) Explain the generation of an action potential in nerve cells. [11]
(b) What role is played by the glial cells in central nervous system. [9]
 3. (a) Describe hormonal control of calcium in the body. [15]
(b) How does calcium function as a second messenger in hormone action? [5]
 4. The pituitary gland is at times referred to as the “master gland” in the endocrine system. Discuss. [20]
 5. Give an account of the influence of cortisol in the body. [20]
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-END OF EXAMINATION-