

Cork Institute of Technology
Bachelor of Science (Honours) in Herbal Science – Stage 1

(NFQ Level 8)

Autumn 2006

Anatomy

(Time: 3 Hours)

Instructions

Answer FIVE questions.

All questions carry equal marks.

Use diagrams to illustrate your answer in all cases.

Examiners: Ms. A Keaveney

Dr. P. Sheehy

Dr. D. Corrigan

Mr. E. Walsh

Q1. Answer either part A or part B but not both.

- (a) (i) List the classification of bone and where each type is found. (2 marks)
- (ii) Describe the main features of the anatomy of human bone. (8 marks)
- (iii) Describe the microscopic anatomy of compact bone using diagrams to illustrate your answer. (10 marks)

OR

- (b) (i) List the classification of neurons in terms of their morphology. (3 marks)
- (ii) Describe the microscopic structure of a typical motor neuron using diagrams to illustrate your answer. (10 marks)
- (iii) Describe the main anatomical features of a neuromuscular junction synapse between a motor neuron and a skeletal muscle fibre. (7 marks)

- Q2. (a) List the regions of the vertebral column. (2 marks)
- (b) Describe the overall structure of the vertebral column indicating the relationship with associated structures including articulating joints, bones, nerves, blood vessels, vertebral disc. (12 marks)
- (c) Describe how the arrangement of the vertebral column changes from the C shape of a new born baby to the adult arrangement. (6 marks)

- Q3. (a) List the types of digestion. (2 marks)

- (b) Describe and discuss the main anatomical structures of the digestive system which assist mechanical digestion. (12 marks)
- (c) List the accessory organs of the digestive system. (6 marks)

- Q4. (a) List the components of blood. (3 marks)
- (b) List and discuss the classification of blood vessels. (7 marks)
 - (c) Describe and compare the microscopic structure of the blood vessels. (10 marks)

- Q5. (a) Compare lymph and blood. (3 marks)
- (b) Describe and compare the anatomical structure of blood and lymphatic vessels. (7 marks)
 - (c) Discuss the inter-relationship of the lymphatic and cardiovascular systems in terms of the anatomical structure, flow of fluid, and routes of drainage of both systems. (10 marks)

- Q6. (a) Describe the anatomical position of the human kidneys. (2 marks)
- (b) Describe the internal anatomical structure of the kidney including blood and nerve supply. (8 marks)
 - (c) Describe and discuss the anatomical structure of a nephron including blood and nerve supply and indicate its relative position within the kidney. (10 marks)

Q7. Answer either part A or B but not both.

- (a) (i) List the main organs of the male reproductive system. (2 marks)
- (ii) Describe and discuss the anatomical arrangement of the system of ducts in the male reproductive system including indicating the relationship of the ducts to surrounding structures and the role of the ducts in the development of sperm. (12 marks)
- (iii) Describe the anatomical structure of sperm. (6 marks)

OR

- (b) (i) List the main organs of the female reproductive system. (3 marks)
- (ii) Describe the external and internal anatomy of the ovaries and fallopian tubes indicating the relationship to the other organs of the female reproductive system. (12 marks)
- (iii) Describe the structure of the mammary glands. (7 marks)

- Q8. (a) Define upper and lower respiratory tracts. (3 marks)
- (b) Write a short essay on lung volumes and capacities. (12 marks)
- (c) Explain Boyle's Law in relation to breathing. (5 marks)