

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

APPLIED PHYSICS DEPARTMENT

SRA 3212 - RADIOGRAPHY PRACTICE

BSc HONOURS PART III: MAY 2005

DURATION: 3 HOURS

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

SECTION A

1. (a) Describe features of a waiting area suitable for paediatric patients. [5]
- (b) Explain the modifications you would make when carrying out a lateral knee examination on an elderly patient with severe osteo-arthritis. [5]
- (c) Define the following pathological conditions and state the radiographic projection (s) that would best demonstrate each condition:
 - (i) hyaline membrane disease
 - (ii) pagets disease
 - (iii) congenital talipes equinus - varus (CTEV)
 - (iv) osgood - Schlatter's disease
 - (v) cystic fibrosis [5]
- (d) (i) Describe TWO pathological conditions for which hips of a child may be radiographed. [2]
(ii) What measures could be employed to keep the radiation dose to the child to a minimum in the long term? [3]
- (e) Explain FIVE features of a department suitable for elderly patients. [5]
- (f) (i) State THREE concerns of a well woman attending for mammography in an imaging department. [3]
(ii) How would such a patient be psychologically prepared. [2]
- (g) Explain the design features of department suitable for physically disabled persons. [5]
- (h) Explain how, as a radiographer you would try to gain the co-operation of a FIVE year old boy presenting for radiography of the chest. [5]

SECTION B

2. (a) Define the term non-accidental injury. [3]
(b) Explain why a radiographer may suspect non - accidental injury (NAI) in a child presenting for imaging. [3]
(c) Explain the course of action a radiographer may take in suspected cases of NAI. [4]
(d) Describe the radiographic projections that may be taken to investigate NAI. [10]
3. (a) With reference to ageing, briefly outline the following theories
(i) wear and tear/stress theory [5]
(ii) toxic theory
(b) For each of the following systems describe TWO physical and/or physiological changes that occur due to ageing
(i) the skin
(ii) musculo-skeletal
(iii) respiratory
Explain how these changes may affect radiography of the elderly. [15]
4. (a) Discuss the features of mobile x-ray equipment suitable for use in a neonatal unit. [8]
(b) State FOUR considerations in dealing with neonates in the special care baby unit. [2]
(c) Describe the radiographic technique you would adopt for chest radiography on a neonate with respiratory distress syndrome. [8]
(d) Describe the radiographic appearance of a neonatal chest. [2]
5. An elderly visually impaired and deaf patient in a wheelchair is referred to the radiodiagnostic department for radiography of the left humerus.
(a) Discuss FIVE practical problems which may be encountered with this patient, explaining how these may be overcome. [15]
(b) Detail the care the patient should receive while in the imaging department. [5]
6. Discuss features of two types of equipment designed to examine seriously injured patients in the accident and emergency department. [20]

- END OF EXAMINATION -