NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

APPLIED PHYSICS DEPARTMENT

SRA 2107 - CARDIOVASCULAR AND LYMPHATIC SYSTEM

EXAMINATION

BSC HONOURS PART II: FEBRUARY 2005 **DURATION: 3 HOURS**

SECTION A

1. a) Explain two modifications to a plain chest radiography examination if cardiac pathology is suspected [5]

   b) (i) Explain the difference between a venous sinus and a vein [2]

   ii) List 6 venous sinuses of the brain [3]

   c) State 5 complications of catheter techniques in imaging of the cardiovascular system. [5]

   d) Explain what is meant by non-ionic contrast medium [5]

   e) Explain the following terms:- (i) aneurysm
   (ii) thrombus [2.5 x 2]

   f) State the areas drained by the coelic axis lymph nodes [5]

   g) Explain the function of the sinuatrial node [5]

   h) Describe the pericardium [5]

SECTION B

2. Discuss equipment suitable for an angiographic suite under the following headings:-
   a) Generator
   b) X-ray tube and support
   c) Xray table
   d) Size of Room
   e) Accessories [5 x 4]

2. Describe two interventional procedures performed for the cardiovascular system. [20]

3. a) What is the use of an automatic pressure injector? [5]
   b) Describe the gross anatomy of the heart [15]

4. a) Describe a lymph node [10]
   b) Explain lymphangiography [5]
   c) Explain one other method of imaging lymph glands [5]

5. a) Describe the microscopic anatomy of the wall of an artery [6]
   b) Explain the differences between the wall of an artery and a vein [4]
   c) Explain the following pathologies:-
      i) arteriosclerosis
      ii) arteriovenous fistula
      iii) dissecting aneurysm
      iv) embolus
      v) ductus arteriosus [5 x 2]

6. a) Describe the arch of the aorta and its branches [16]
   b) Explain coarctation of the aorta [4]