

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

APPLIED PHYSICS DEPARTMENT

SRA 1204 – THE APPENDICULAR SKELETON

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

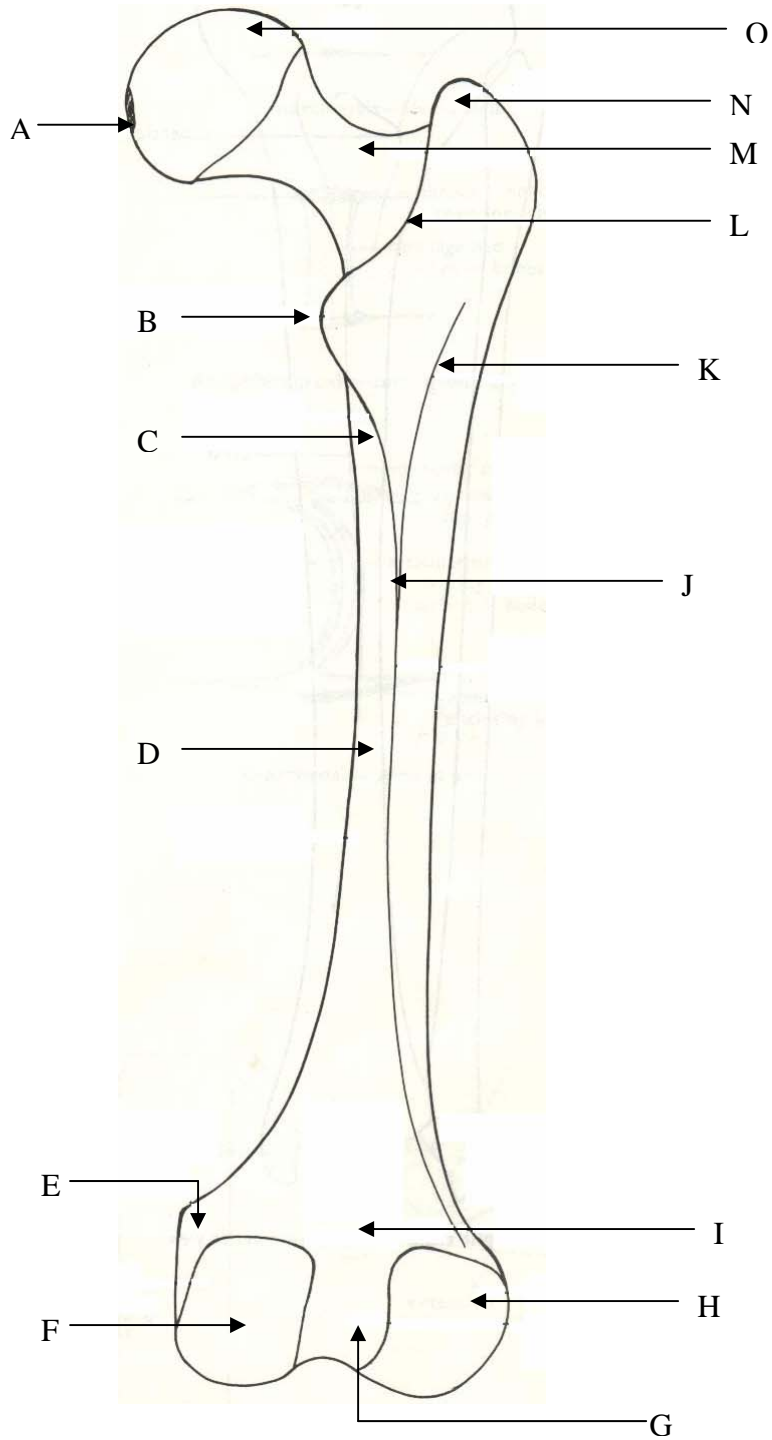
1. (a) State five pathological conditions of the foot which would require radiographic examination. [5]
- (b) Describe the position of the patient and relevant equipment for radiography of the right hand dorsi -palmar oblique projection. [5]
- (c) Name the bone on which the following are found:-

PART	BONE
i. Lesser tubercle	
ii. Coracoid process	
iii. Apex	
iv. Conoid tubercle	
v. Soleal line	
vi. Trochlea surface	
vii. Sulcus calcanei	
viii. Trochlea notch	
ix. Arched line	
x. Lesser Sciatic notch	

[5]

- (d) (i) Explain Colle's fracture. [3]
- (ii) State modifications that is done for a patient for radiography of the wrist after reduction of a fracture with Plaster of Paris immobilisation. [2]
- (e) Draw and label a rotating anode X-ray tube insert for general radiography. [10]

(f) (i) Identify and label the diagram below:

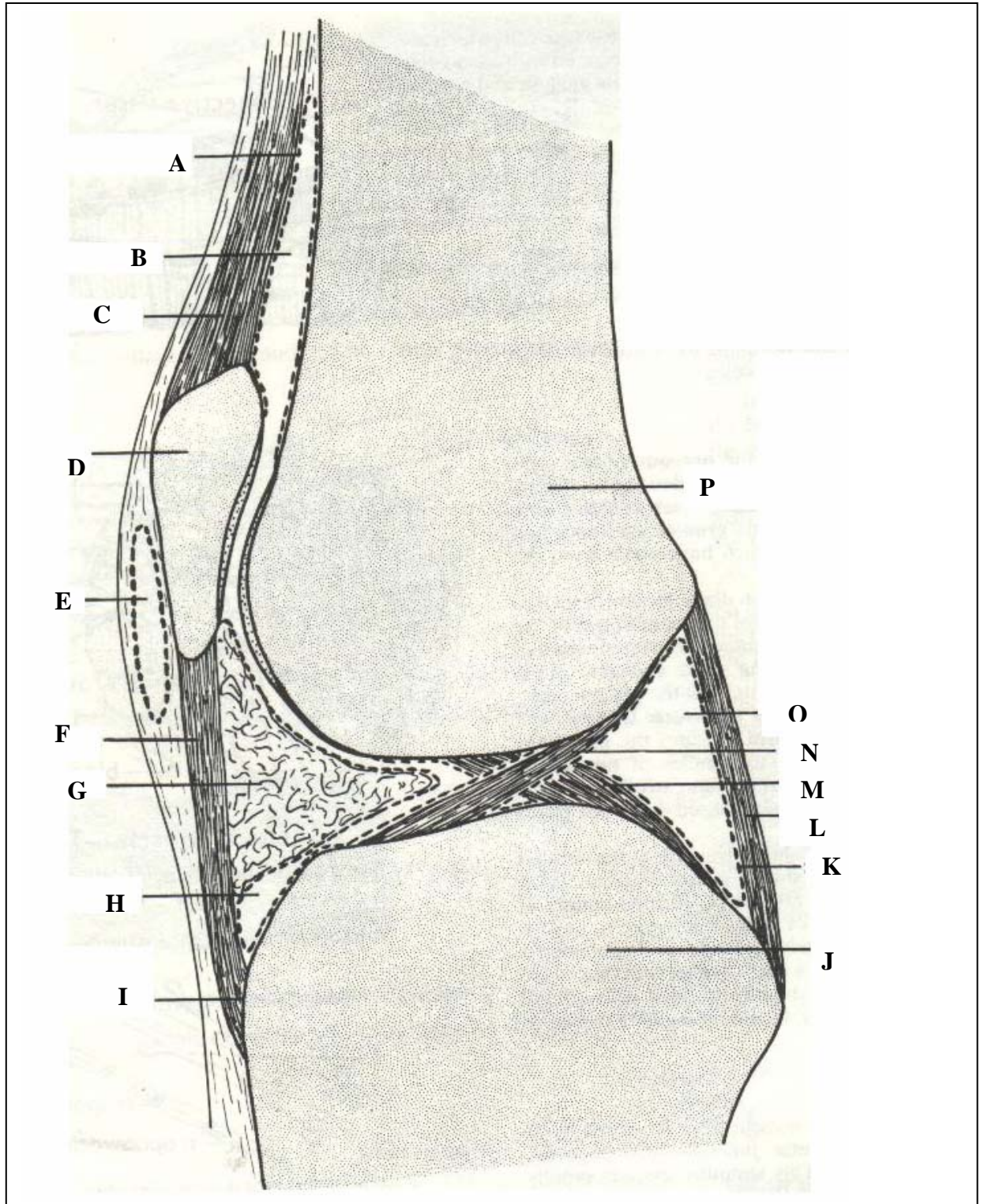


[8 ½]

- (ii) State three types of internal fixation for reducing and immobilisation of the femur. [1 ½]

SECTION B

2. (a) Label the sagittal section of the knee. [8]



- (b) A professional footballer presents to the department with an X-ray request for the radiography of the right knee; describe how the lateral knee radiograph is produced. [8]
- (c) State two imaging modalities/procedures which would produce more information about the injury.
3. (a) Describe the following fractures:-
- (i) Complicated [2]
 - (ii) Communuted [2]
 - (iii) Greenstick [2]
 - (iv) Spiral [2]
 - (v) Transverse [2]
- (b) Having sustained multiple fractures to the lower limb, a patient is referred to the imaging department for a radiographic examination of the left tibia and fibular. Outline the patient care requirements for the management of this patient. [10]
4. (a) Describe the two routine projections for the radiography of the elbow. [15]
- (b) State why modification to routine technique may be necessary. [5]
5. (a) Explain why an imaging department would require different sizes of cassettes which should have different characteristics. [10]
- (b) Discuss radiation protection with regard to radiography of the appendicular skeleton. [10]
6. (a) Describe the position of the patient and relevant imaging equipment for radiography of a single hip antero-posteriors. [10]
- (b) Describe the following and explain their relevance in imaging:
- (i) anode heel effect [4]
 - (ii) line focus principle [6]

-END OF EXAMINATION-