

UNIVERSITY COLLEGE LONDON

UNIVERSITY OF LONDON

EXAMINATION FOR INTERNAL STUDENTS

FOR THE FOLLOWING QUALIFICATIONS:

M.Sc.

Health Sciences C103: Biomaterial Science

COURSE CODE	:	HESCC103
UNIT VALUE	:	0.5
DATE	:	14-MAY-04
TIME	:	10.00
TIME ALLOWED	:	3 Hours

Answer **FOUR** out of **SIX** (20 marks for each question)

Answer **EACH** question in a **SEPARATE** book

Use diagrams to illustrate your answers where possible

1. Describe the properties which a modern, advanced biomaterial should have for tissue engineering of skin.
2. Describe the advantages and disadvantages of testing biomaterials using *in vivo* and *in vitro* models.
3. Describe the events that occur at a hydroxyapatite interface with bone in the short and long term and the host implant characteristics that can modify these events.
4. Focal endosteal lysis along the femoral stem/bone interface was referred to as 'cement disease' in the 1980's. Why is it no longer referred to as this and what are the mechanisms and causes of these osteolytic cavities?
5. What are the advantages and disadvantages of using ceramics, metals and plastics at articulating surfaces?
6. What tissue engineering approaches have been used to regenerate bone, cartilage and tendon?