

UNIVERSITY COLLEGE LONDON

University of London

EXAMINATION FOR INTERNAL STUDENTS

For the following qualifications:

M.Sc.

HEALTH SCIENCES C104: BIOMECHANICS

COURSE CODE	:	HESCC104
UNIT VALUE	:	0.50
DATE	:	12 May 2003
TIME	:	10. 00 am
TIME ALLOWED	:	3 hours

03-C0682-3

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TURN OVER

HEALTH SCIENCES C104: BIOMECHANICS

Answer FOUR QUESTIONS

Answer EACH question in a SEPARATE book

1. Compare and contrast the wear of knee replacements with the wear of hip replacements.
2. Indicate the role that soft tissues have on the motion of the knee.
3. Describe the biological response to the wear debris produced from two types of total hip replacements, namely metal-on-metal and metal-on-polyethylene.

Your answer should include local, systemic and toxicological effects.

4. Compare and contrast the advantages and disadvantages of the standard, modular and custom-made hip system in total hip replacements
5. In total hip replacements:
 - a) Discuss current problems and causes for failure.
 - b) You are asked to design an ideal hip implant, what design features, fixation methods and materials would you consider and why
6. Describe the design features of two types of knee implants:
 - (a) meniscus bearing knee
 - (b) posterior stabilized condylar knee

What kind of clinical problems are these designs trying to solve?

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