



PRINCE OF SULTAN UNIVERSITY
FACULTY OF ENGINEERING
Department of Computer Engineering

Final Examination: Semester 2

Academic Year: 2006-2007

Date: 22nd February, 2007

Time: 9.00 – 11.00 (2 hours)

Subject Number: 240-571

Room: R200

Subject Title: Introduction to J2ME Programming

Lecturer: Aj. Andrew Davison

Exam Duration: 2 hours

This paper has 2 pages.

Authorized Materials:

- Writing instruments (e.g. pens, pencils).
- Books (e.g. dictionaries) and calculators are **not** permitted.

Instructions to Students:

- *Answer questions in English.* Perfect English is **not** required.
- Attempt all questions.
- Write your answers in an answer book.
- Start your answer to each question on a new page
- Clearly number your answers.
- Any unreadable parts will be considered wrong.
- When writing programs, use good layout, and short comments; marks will not be deducted for minor syntax errors.
- The marks for each part of a question are given in brackets (...).

Question 1

(45 marks; 45 minutes)

- a) Explain how to create a fixed-rate animation loop inside a GameCanvas. (20)
- b) Explain how keyboard input is processed by GameCanvas. (10)
- c) Explain the TiledLayer class. (15)

Include code fragments and diagrams where possible.

Question 2

(55 marks; 55 minutes)

- a) Explain how to load an M3G model from a file and render it. (10)
*Note: do **not** include code to examine the loaded model's scene graph, or to rotate, translate, or scale it.*
- b) Explain the M3G scene graph. (10)
- c) Explain how to add a camera to the scene graph. (5)
- d) Explain how to periodically *update* a scene graph. (30)

Include code fragments and diagrams where possible.

Question 3

(20 marks; 20 minutes)

- a) Explain how to retrieve text over the network by using HTTP get. (10)
- b) What is a DatagramConnection? (10)

Include code fragments and diagrams where possible.

--- *End of Examination* ---