



THE UNIVERSITY OF
WESTERN
AUSTRALIA

Department of Computer Science and Software Engineering

Mid-Semester Test 2018

UNIT CODE (CITS3003)
Computer Graphics and Animation

FAMILY NAME: _____ GIVEN NAMES: _____

STUDENT ID:

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 SIGNATURE: _____

This Paper Contains: **6 pages (including title page)**
Time allowed: **45 Minutes**

INSTRUCTIONS:

This paper contains 4 questions.

Candidates should attempt all questions.

TOTAL MARK: 30

Please provide your answer in the space provided for each question.

PLEASE NOTE

Examination candidates may only bring authorised materials into the examination room. If a supervisor finds, during the examination, that you have unauthorised material, in whatever form, in the vicinity of your desk or on your person, whether in the examination room or the toilets or en route to/from the toilets, the matter will be reported to the head of school and disciplinary action will normally be taken against you. This action may result in your being deprived of any credit for this examination or even, in some cases, for the whole unit. This will apply regardless of whether the material has been used at the time it is found.

Therefore, any candidate who has brought any unauthorised material whatsoever into the examination room should declare it to the supervisor immediately. Candidates who are uncertain whether any material is authorised should ask the supervisor for clarification.

Supervisors Only – Student left at:

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Question 1.

(6 marks)

What are attributes and primitives in OpenGL? Give two examples of each.

Question 2.

(4 marks)

- (a) (2 marks) What is the difference between *request input mode* and *event input mode*?
- (b) (2 marks) Give any two common applications of vertex shaders in OpenGL.

Question 3.**(10 marks)**

- (a) (6 marks) Why do we need a frame of reference? Explain how points and vectors in 3D are represented in homogeneous coordinates. Why is the use of homogeneous coordinates important in computer graphics?

- (b) (4 marks) Explain what the following variables/functions do in an OpenGL program:

i) `gl_FragColor;`

ii) `glutInitWindowSize(175, 450);`

Question 4.

(10 marks)

(a) (6 marks) What do the following functions do in OpenGL: 1) main(), 2) init() and 3) display() ?

(b) (4 marks) What is a *varying* variable? Describe when it would be suitable to use a varying variable.

END OF PAPER
