



PLACE LABEL HERE

Tasmanian Certificate of Education

COMPUTER GRAPHICS AND DESIGN

Senior Secondary

Subject Code: CGD315108

FINAL SAMPLE External Assessment

2008

Time: Two Hours

On the basis of your performance in this examination, the examiners will provide results on each of the following criteria taken from the syllabus statement:

Criterion 2 Solve problems.

Criterion 7 Demonstrate a knowledge and understanding of contemporary computer graphics systems.

Questions: 24
Pages: 24

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CANDIDATE INSTRUCTIONS

You **MUST** ensure that you have addressed **ALL** of the externally assessed criteria on this examination paper.

You must attempt:

Section A: **FOUR** questions

Section B: **FOUR** questions

Section C: **ONE** question

Section D: **ONE** question

Sections C and D have a double weighting compared to **Sections A and B**.

All answers must be written in the spaces provided on the examination paper.

Care should be taken with the presentation of answers. The answers should be comprehensive and to the point. Diagrams are encouraged but **NOT** to the exclusion of all text.

It is recommended that you spend approximately:

20 minutes on Section A

20 minutes on Section B

40 minutes on Section C

40 minutes on Section D

All written responses must be in English.

SECTION A

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This section assesses **Criterion 2**.

Answer **FOUR** questions from this section.

All questions are of equal value.

Question 1

Outline at least four key questions an Architect would ask a client at their initial meeting when creating a design brief for a new home.

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Question 2

Rendering a complex 3D animation can be a painfully slow process. List 3 strategies that you can employ to optimise the quality and quantity of rendering output.

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Question 3

Design evaluation often involves more than just confirming that the physical elements of the design are up to standard. Product testing needs to consider a broad range of issues. Identify a product and suggest some ways that it would need to be evaluated prior to entering the market.

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Question 4

Define RGB and CMYK colour systems and identify the most appropriate application of each system to produce images using Computer Graphics software.

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Question 5

What are the main issues in archiving, retrieval and storage of design data? Identify a computer based system that is designed to improve the efficiency of these processes.

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Question 6

Designers frequently use layers and groups to simplify complex tasks. Provide an example where each of these two methods would be most appropriate to be used in producing Computer Generated Imagery (CGI)

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Question 7

The protection of ‘Intellectual Property’ is a major issue for designers, software producers, musicians and publishers. Describe some steps these people could take to protect their work from unauthorised use.

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Question 8

Computer Generated Imagery (CGI) is often produced as either a 'raster' or 'vector' graphic. Explain the difference between these two graphic types and provide an example where each type is best used.

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SECTION B

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This section assesses **Criterion 7**

Answer **FOUR** questions from this section.

All questions are of equal value.

Question 9

‘Rapid prototyping’ and ‘stereo lithography’ are examples of techniques used to produce ‘real world’ 3D models directly from 3 dimensional co-ordinate data. Provide a detailed description of one of these processes.

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Question 10

Tweening, 'curve editing', 'key framing', 'dope sheet', 'inverse and forward kinematics' and 'biped' are terms frequently used by animators. Provide a detailed definition of any two of these terms.

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Question 11

Designers usually play an integral part in the production process. Why is it important that the designer's job does not end when the drawings and design data are handed over to the clients?

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Question 12

Finite Element Analysis (FEA) systems are used by engineers and other designers to evaluate critical elements of their design. Explain what is meant by the term Finite Element Analysis and provide one example of where it may be used.

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Question 13

Booleans are a technology that is a common feature set of 2D & 3D computer graphics systems. Explain the principles of Booleans and the types of operations that can be performed.

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Question 14

Typical computer systems use a variety of input devices to assist in the creation of digital content. Identify 3 input devices, briefly commenting on the function of each.

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Question 15

The word ‘Design’ means many things to many people. It may include such elements as colour, unity, minimalism, balance, limitations, proportion, tone, texture, cost, repetition, contrast, aesthetics, sustainability and fashion. Comment on any two of these elements, outlining the part each plays in establishing the overall character of a design.

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Question 16

The Fibonacci system is based on a mathematical principle in which proportion of natural and human made structures conform to certain number sequences. Comment on an example an object or structure where there is evidence of Fibonacci sequences.

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| SECTION C |
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This section assesses **Criterion 2**.

Answer **ONE** question from this section.

Your answer should consist of a series of annotated sketches followed by written notes explaining important features of the design.

Clearly indicate which question you are answering.

Question 17

An animation company is producing a short series called 'Journey To Xanadu' about a ten (10) year old boy and twelve (12) year old girl's adventures in a high tech futuristic world set in the year 2080.

- (a) Describe in words and sketches the processes a designers/developers would go through to produce a character design for one of the characters.
- (b) Produce developed front and side-on sketched views of one of the characters showing their persona (body & facial features) and clothing.
- (c) Describe the personality of the selected character and how this is reflected in your concept development sketches

Question 18

The Student Council of Riverview College has identified the need for more seating & tables at the College that are comfortable yet resistant to being damaged.

- (a) You and your design team are approached to design, prototype and build such seating & tables, which you hope could also be marketed to other Schools and Colleges.
- (b) Describe in detail the sort of decisions & consultation that you would need to make prior to designing the seating.
- (c) **Sketch at least two** preliminary designs with notes clearly showing what is required for the seat & table to be comfortable to use and be resistant to damage.

Question 19

The Tasmanian Council for Safe Cycling has identified a need to promote greater awareness of safe cycling to young Tasmanians.

You and your design team have been approached to produce a short 5 minute film incorporating live footage, animation and still graphics to promote the safe cycling message.

- (a) Describe in detail the steps involved in producing the 5 minute about riding a bicycle safely. Titles and credits are required at both the beginning and end. In addition.
- (b) Sketch out a storyboard sequence of at least 8 panels that will provide a detailed visual overview of the proposed short film. Included explanatory text and planned audio/sound effects.

Question 20

A new youth fashion outlet called ‘**Dirt**’ that sells a range of clothing brands and apparel to appeal to young people in the 16 to 25 age bracket requires a visual identity (logo) for their store and marketing materials.

- (a) Describe in detail the design considerations and market research a designer would need to consider in the development of suitable branding for such a store.
- (b) Sketch a series of three logos for the shop owners that will be the brand identity and discuss the design elements, design principles and colour schemes used in each of your three designs.

Sketch Sheet for Question No:

Sketch Sheet for Question No:

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| SECTION D |
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This section assesses **Criterion 7**.

Answer **ONE** question from this section.

Your answer should consist of a written response in an essay format.

Clearly indicate which question you are answering.

Question 21

Select a major design movement (for example Bauhaus, Modernism, Post Modernism etc.), identify the origin of the movement, the commonly identified themes within the movement and discuss the work of at least two of the well known practitioners of the movement.

Question 22

Motion capture technologies are being increasingly used in the production of feature films. Films such as Polar Express, Beowulf and most famously the character Gollum in the Lord of the Rings trilogy all extensively featured motion capture technologies applied to digital characters and doubles. Discuss a range of motion capture technologies and the advantages and disadvantages of using motion capture in the production of feature films.

Question 23

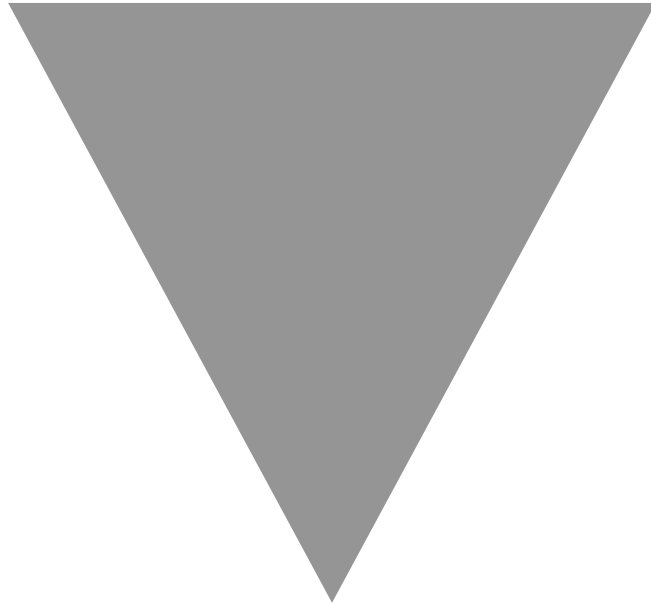
Designers frequently seek to strike a balance between ‘form’ and ‘function’. In many circumstances designers also need to consider ‘aesthetics’.

- (a) Define these terms in the context of design.
- (b) Discuss the design of at least three objects/products where compromises between these principles may have been necessary.
- (c) Discuss an example where the designer has not adequately addressed these principles in achieving a balance in the design outcome.

Question 24

There are many royalty-free sites on the Internet that supply a vast range of resources to help designers produce Computer Generated Imagery (CGI). Discuss some of the advantages and disadvantages of these sites as your primary sources of content compared to the advantages and disadvantages of producing your own custom content.

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