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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2013/2014**

COURSE NAME : 3D MODELING AND ANIMATION
COURSE CODE : DAT 32203
PROGRAMME : 2 DAT
EXAMINATION DATE : JUNE 2014
DURATION : 2 HOURS
INSTRUCTION : A) ANSWER ALL QUESTIONS
B) ANSWER **THREE (3)** QUESTIONS ONLY

THIS QUESTION PAPER CONSISTS OF **SEVEN (7)** PAGES

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SECTION A

INSTRUCTION: Answer all questions.

Q1 Producing 3D animation usually involves understanding on the basic information, principle and process behind it.

(a) Discuss **TWO (2)** criteria of 3D Model (2 marks)

(b) Explain **THREE (3)** differences between 2D computer graphic and 3D computer graphic. (6 marks)

(c) 2D animation figures are created and or edited on the computer using 2D bitmap graphics or using 2D vector graphics. There are 2 types of 2D animation.

List **TWO (2)** types of 2D animation. (2 marks)

Q2 You have to able to see the project as a whole and plan a strategy for accomplishing it. There are three major process used to create a 3D animation.

1. Preproduction
2. Production
3. Post Production

(a) Discuss each of the major process that you had listed above in details. (6 marks)

(b) A production house can usually quote a price based on storyboard that has been created for 3D animation project. Usually the main factor of pricing is the length of 3D animation.

Identify **TWO (2)** other factors that can affect the pricing of 3D animation project. (4 marks)

Q3 Many different techniques can be used to create the 3D objects in your animation. The most important thing before modeling process is exactly understanding on your 3D object. Simply observe the core elements and forms that build up your objects.

(a) State the definition of 3D modeling (2 marks)

(b) List **THREE (3)** types of modeling that you had learned. (3 marks)

(c) Choose modeling technique than can be used to develop a 3D model based on figure **Q3 (c)**. (15 marks)

SECTION B

INSTRUCTION: Answer **ONLY THREE (3)** questions.

Q4 Working with 3D graphics can be frustrating if you don't have a solid handle on the principles and theory involved.

(a) List **THREE (3)** principles of 3D graphics (3 marks)

(b) Discuss on each of the principles that you have mention above. (6 marks)

(c) Define viewpoint. (1 Marks)

Q5 The most common method of presenting animation is as a motion picture or video program, although there are other methods. The purpose of animation is to serve the story – to capture images of life and as a process to communicate with others. These are 3 types of animation :

1. Traditional animation
2. Stop motion
3. Computer animation

(a) Choose **TWO (2)** techniques that can be used in creating traditional animation. (4 marks)

(b) Choose **TWO (2)** techniques that can be used in creating stop motion animation. (4 marks)

(c) List **TWO (2)** Principles of Animation. (2 Marks)

Q6 Applying materials and mapping to a 3D object is an essential phase. This phase is the most crucial part as it needed a good imagination and artistic capability in order to develop a believable 3D objects to be used in 3D animation.

(a) Explain what the differences between “*Material*” and “*Mapping*” ? (2 Marks)

(b) Choose types of material and shaders that can be applied to produce 3D model such as **figure Q6 (b)**.
(4 marks)

(c) Choose **TWO (2)** types of mapping that can be applied to produce 3D model such as **figure Q6 (c)**.
(4 marks)

Q7 Lighting has a big impact on the appearance of final renderings. There are 5 main light sources in 3D programs. Light Parameters is the lighting controllers and effects in 3d software. When a light is selected, several different rollouts appear that enable you to turn the lights on and off and determine how a light affects object surfaces.

(a) Explain **TWO (2)** main light sources that you had learned.
(4 marks)

(b) List **TWO (2)** light parameters that you had learned.
(2 marks)

(c) Describe lighting setup that you had learned in order to produce lighting for 3D model such as **figure Q7 (c)**.
(4 marks)

Q8 Virtual cameras have a massive advantage over their real-world counterparts. In 3D space, cameras are free to move anywhere in the scene, even inside objects. Camera should be treated as an observer and should be able to move to whatever angle best suits the message or image the director is trying to convey.

(a) Demonstrate **TWO (2)** of camera movements that you had learned.
(4 marks)

(b) Discuss each of camera viewpoints angle that you had learned.
(4 marks)

(c) Define "**The Line of Action**".
(2 marks)

- END OF QUESTION -

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FIGURE Q3 (c) : Minion

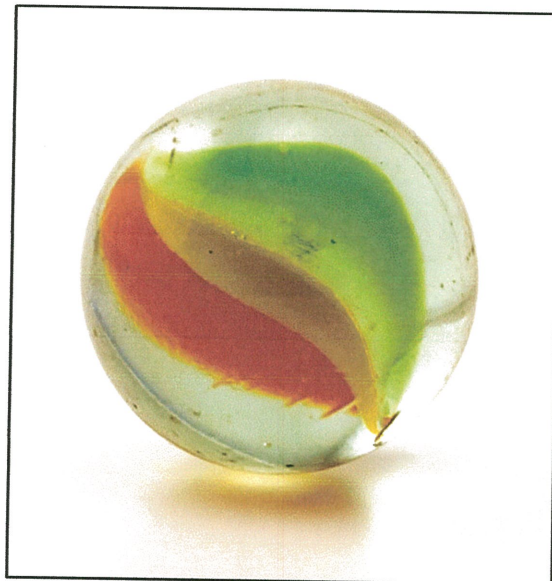


FIGURE Q6 (b) : Marbles

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FIGURE Q6 (c)

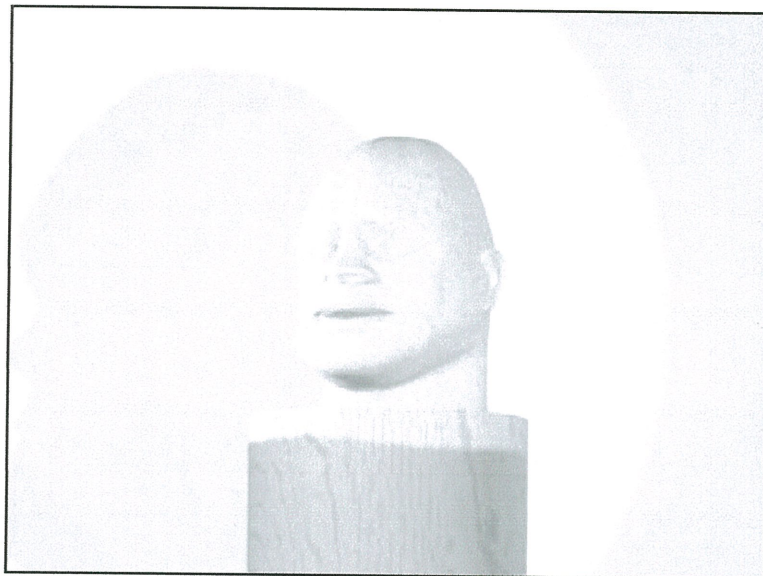


FIGURE Q7 (c)