



**UNIVERSITI TUN HUSSEIN ONN  
MALAYSIA**

**FINAL EXAMINATION  
SEMESTER I  
SESSION 2022/2023**

COURSE NAME	:	3D MODELING AND ANIMATION
COURSE CODE	:	DAT 21403
PROGRAMME CODE	:	DAT
EXAMINATION DATE	:	FEBRUARY 2023
DURATION	:	3 HOURS
INSTRUCTION	:	1. ANSWER <b>ALL</b> QUESTIONS 2. THIS FINAL EXAMINATION IS CONDUCTED VIA <b>CLOSED BOOK</b> . 3. STUDENTS ARE <b>PROHIBITED</b> TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA CLOSED BOOK

THIS QUESTION PAPERS CONSISTS OF **SIX (6)** PAGES

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**PART A**

**Q1** 3D animation process refers to the work of creating moving pictures in a digital environment that is three-dimensional. 3D animation process consists of preproduction, production and postproduction process.

(a) List **FOUR (4)** activities involve in preproduction process. (4 marks)

(b) Explain **THREE (3)** activities in production process. (6 marks)

(c) Differentiate between inverse kinematic and motion capture. (8 marks)

(d) Describe rendering activities involve in production phase. (2 marks)

**Q2** (a) Briefly explain **FOUR (4)** detail criteria's of 3D model. (8 marks)

(b) Describe **THREE (3)** differences between path animation and cel animation. (12 marks)

**Q3** **Figure Q3(1)** shows the perspective view of the orthographic object.

(a) Sketch the of the object : (6 marks)

(i) top view (z-axis)

(ii) front view (y-axis)

(iii) left view (x-axis)

(8 marks)

(6 marks)

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**PART B**

**Q4** Material often used in 3D Blender to apply coating colors and textures onto the created object. Mapping material to an object is the term used to describe how the textures are projected onto the geometry scale for finalizing step before rendering.

(a) List **ONE (1)** type of material and **ONE (1)** type of shader.

(2 marks)

(b) Describe **THREE (3)** types of material that exist in 3D modeling.

(6 marks)

(c) Describe types of material and shader that can be applied in order to generate 3D model as shown in **Figure Q5(c)**. The three marble are made from glass render with two lights on

(10 marks)

(d) Tweening is a main process in all types of animation, including computer animation. Briefly explain tweening process in keyframe animation.

(2 marks)

**Q5** In general, lighting give a huge factor on the look of final renderings. 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) Name **TWO (2)** types of lighting in 3D modeling.

(2 marks)

(b) Explain **THREE (3)** main light sources that can be applied in 3D Blender modeling.

(6 marks)

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- (c) Determine light parameters that can be manipulated to produce final images for rendering purpose.

(10 marks)

- (d) Describe **TWO (2)** purposes of three-point lighting light setup.

(2 marks)

**-END OF QUESTIONS-**

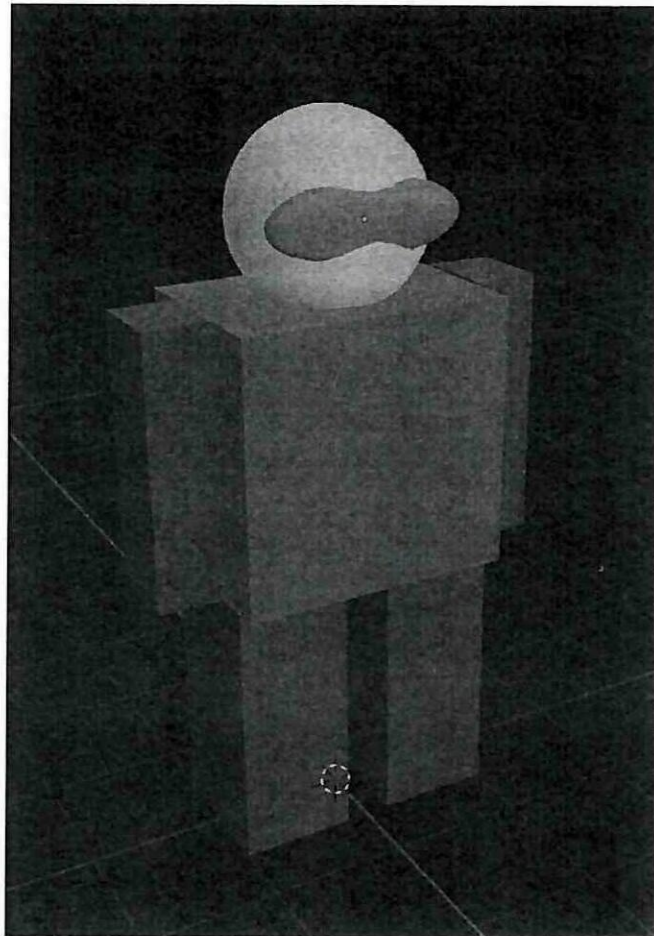
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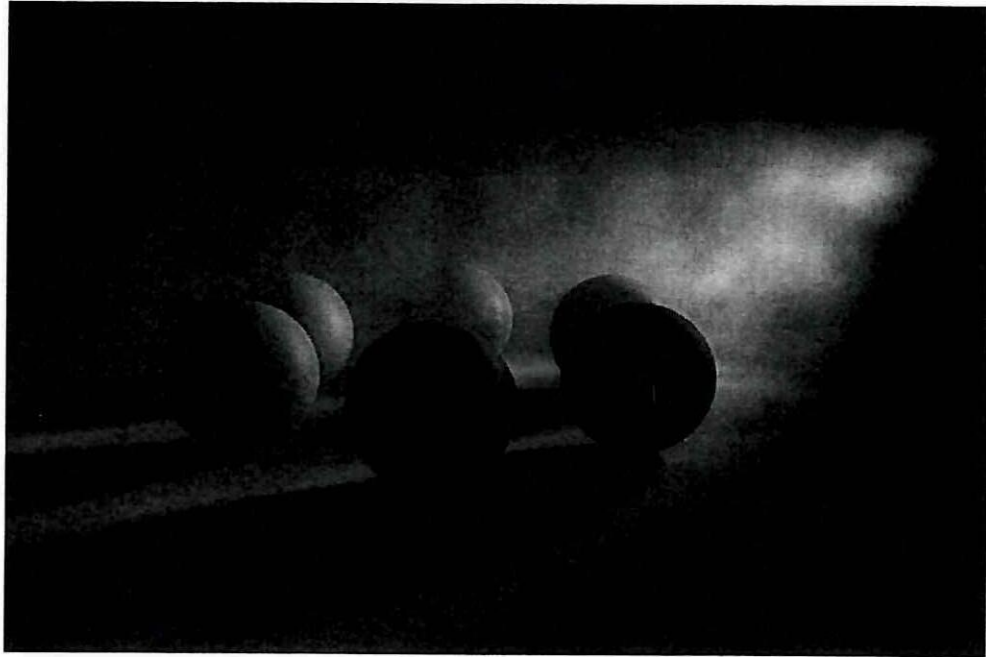
**Figure Q3(1)**

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**Figure Q5(c)**

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