



PAN AFRICA CHRISTIAN UNIVERSITY

BACHELOR OF BUSINESS INFORMATION TECHNOLOGY

END OF TERM EXAMINATION

DEPARTMENT: COMPUTING & INFORMATION TECHNOLOGY

COURSE CODE: BIT 400

CAMPUS: ROYSAMBU

COURSE TITLE: COMPUTER GRAPHICS

EXAM DATE: DD MM 2022

TIME: START _____ HOUR _____ END HRS

INSTRUCTIONS

- This exam script has **TWO (2)** sections.
- Read all questions carefully before attempting.
- Answer All questions in Section **A** and any other THREE questions in Section **B**.
- None programmable calculators permitted
- Calculators on phones, tablets and computers are NOT permitted in Theory Papers

SECTION A

(Answer ALL questions in this section)

QUESTION ONE

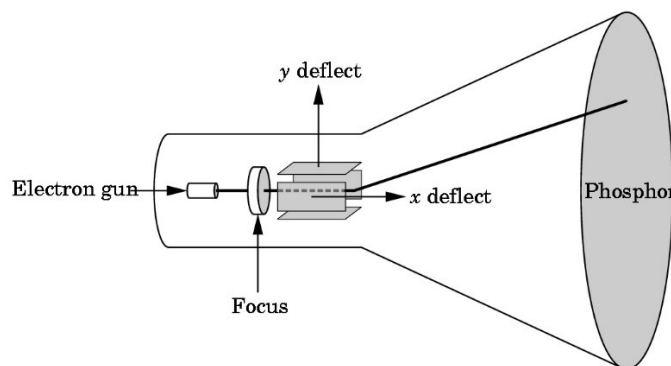
- a) Geometry plays a significant role in Computer Graphics. Justify. **(2 Marks)**
- b) Explain how you can enhance image creation using the concept of Mipmapped Textures **(2 Marks)**
- c) Describe THREE ways in which Computer Graphics influence contemporary life. **(3 Marks)**
- d) Explain the implications that could occur on view due to altering the center of projection for an image. **(3 Marks)**

SECTION B

(Answer any THREE (3) questions in this section)

QUESTION TWO

- a) Describe the rationale for ray tracing in image formation **(4 Marks)**
- b) Human eyes can see a steady image on most CRT displays when the same path is retracted by a beam of at least 50 HZ. Explain why this is so, basing your response on the calligraphic CRT shown below. **(6 Marks)**



QUESTION THREE

- a) Describe basic components of OpenGL program structure. **(6 Marks)**
- b) Describe any TWO shading techniques used in Computer Graphics. **(4 Marks)**

QUESTION FOUR

- a) Explain the rationale for animation in Computer Graphics. **(2 Marks)**
- b) Martin intends to use homogenous coordinates in image creation. Explain any FOUR benefits of using this approach. **(4 Marks)**
- c) Explain any TWO use cases in which computer animation can be used in our day-to-day life. **(4 Marks)**

QUESTION FIVE

- a) Describe any TWO mechanisms used to achieve rendering in Computer Graphics **(4 Marks)**
- b) Describe how the THREE basic elements of Geometry impacts the Computer Graphics design **(6 Marks)**

QUESTION SIX

- a) As a state machine, OpenGL has TWO main function types. Explain. **(4 Marks)**
- b) Explain how the light source and object properties influence the illumination of the surface. **(6 Marks)**

**PAN AFRICA CHRISTIAN UNIVERSITY
EXAMINATIONS PAPER**



End of Exam