



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 2020

TIME: START HOUR – END 17:30-19:30 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) Explain any THREE effects of Computer Graphics in our contemporary life.

(3

Marks)

- b) Explain how MIPMAPPED TEXTURES can enhance image creation **(2 Marks)**
c) Geometry plays a significant role in Computer Graphics. Explain. **(2 Marks)**
d) Explain the implications that could occur on view due to altering of the center of projection for an image. **(3 Marks)**

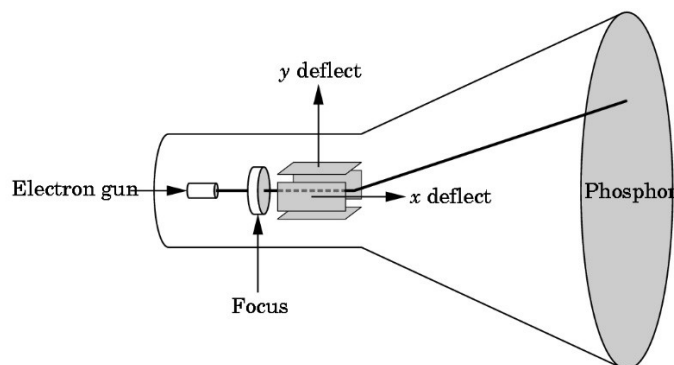
SECTION B

(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 retraced 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) Collins intends to use homogenous coordinates on image creation. Explain any FOUR benefits for 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 surface. **(6 Marks)**

End of Exam

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