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KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2023/2024 ACADEMIC YEAR
THIRD YEAR, SECOND SEMESTER EXAMINATION
FOR THE BACHELOR OF SCIENCE IN COMPUTER SCIENCE
KCS 310 – COMPUTER GRAPHICS

Date: 14TH AUGUST 2023
Time: 2:30PM – 4:30PM

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

- a) Define the following terms:
- i) Inking: (2 Marks)
 - ii) Scissoring: (2 Marks)
- b) With two examples for each, describe the two classes of input devices (4 Marks)
- c) The process of producing 3D animations is divided into three parts, demonstrate their functions (6 Marks)
- d) Given a point with coordinates (2, 4). Apply the translation with distance 4 towards x-axis and 2 towards the y-axis. Find the new coordinates without changing the radius? (4 Marks)
- e) Describe the several types of projection available (6 Marks)
- f) Printers are vital part of the output process in computer graphics. Discuss the two main classifications of printers highlighting examples of each. (6 Marks)

QUESTION TWO (20 MARKS)

- a) Explain the two polygon filling methods. (6 Marks)
- b) Expressing its use, State the concept of Vanishing point. (5 Marks)
- c) A point has coordinates P (1, 2, 3) in x, y, z-direction. Apply the translation with a distance of 2 towards x-axis, 3 towards y-axis, and 4 towards the z-axis. Find the new coordinates of the point? (9 Marks)

QUESTION THREE (20 MARKS)

- a) The Orthographic projection is divided into two part, using vivid diagrams, describe them. (8 Marks)
- b) Describe the three types of lines in computer graphics (6 Marks)
- c) Differentiate between Vector scan display and Raster scan display. (6 Marks)

QUESTION FOUR (20 MARKS)

- a) Using a well labeled diagram, demonstrate the two beam refreshing types. (6 Marks)
- b) Write algorithm to clip line using Cohen Sutherland line clipping algorithm. (5 Marks)
- c) Explain Window to Viewport transformation highlighting all the steps involved (9 Marks)

QUESTION FIVE (20 MARKS)

- a) With the aid of illustrations, describe the types of animation used in computer graphics (6 Marks)
- b) Illustrate the Algorithm of scan line polygon-fill (5 Marks)
- c) Explain parallel projection with its types. (9 Marks)