BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF SCIENCE EDUCATION

DEPARTMENT OF EDUCATIONAL TECHNOLOGY

BACHELOR OF SCIENCE EDUCATION IN COMPUTER SCIENCE

CS411/EDT411: COMPUTER GRAPHICS

TIME: 3 HOURS

JAN 2025

INSTRUCTIONS

Answer **ALL the questions.** Each question carries **20** marks.
The question paper has **five** questions

Question 1

i. Define the following terms: [6]
   a. Computer graphics
   b. Aspect ratio.
   c. Raster Scan

ii. Give one example of an aspect ratio [2]

iii. Give **four** of the advantages of Computer Graphics [8]

iv. List **any two** of the polygon filling algorithms. [4]

Question 2

i. Translate the polygon with co-ordinates A (3, 6), B (8, 11), & C (11, 3) by 2 units in X direction and 3 units in Y direction. [4]

ii. Write DDA Arc generation algorithm. [7]

iii. Explain the three different character generation methods. [9]

Question 3

i. Use Bresenham's line drawing algorithm to rasterize line from (6, 5) to (15, 10). [12]

ii. Explain with the aid of a diagram how the Cathode ray tube works [8]

Question 4

i. Use the Cohen Sutherland algorithm to clip two lines P1(35,10)-P2(65,40) and P3(65,20)-P4(95,10) against a window A(50,10), B(80,10), C(80,40) and D(50,40). **[12]**

ii. Explain composite transformation over arbitrary point. **[8]**

Question 5

i. Write a Program in 'C++' for DDA Circle drawing algorithm **[10]**

ii. Rotate a triangle defined by A(0,0), B(6,0), & C(3,3) by 90^0 about origin in anti-lock wise direction **[10]**

THE END OF EXAMINATION PAPER