

Roll No. :

Total No. of Questions : 11]

[Total No. of Printed Pages : 3

BFMS-473

M.Sc. (Final) Examination, 2023 INFORMATION TECHNOLOGY

Paper - MIT-204

(Computer Graphics)

Time : 3 Hours]

[Maximum Marks : 50

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section-B

(Marks : 3 × 5 = 15)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **3** marks.

Section-C

(Marks : 5 × 3 = 15)

Note :- Answer any *three* questions out of five (Answer limit **500** words). Each question carries **5** marks.

Section-A

1. (i) What is interactive graphics ?
- (ii) List any *five* input and output devices in computer graphics.
- (iii) What is pixel ?

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- (iv) Define Scan conversion.
- (v) What do you mean by scanning of an object in computer graphics ?
- (vi) Define clipping
- (vii) Give transformation matrix for 3D translation.
- (viii) Define a curve.
- (ix) Write name of any *two* graphics standards.
- (x) Define vertices and edges

Section-B

2. Write a note on Frame buffer. How is it used in computer graphics ?

Or

Differentiate Random and Raster displays.

3. Write an algorithm to scan convert a circle.

Or

Find points of a line between (0,10) to (5,15) using any line scan conversion algorithm.

4. Suppose there is a triangle ABC in a 2D space such that A(5,10), B(25,10) and C(15,50). Find coordinates of this triangle after translating it with $t_x = 10$ and $t_y = 20$

Or

Explain the role of Homogeneous coordinates in a 2D Transformation.

5. Explain geometric continuity with example

Or

Write a note on Bezier curve

6. How is boundary represented in solid modelling ? Explain.

Or

Explain Boolean set operations for solid modelling.

Section-C

7. What is the difference between CRT and Flat Panels ? Explain functioning of CRT monitor.
8. Write and explain any *one* polygon filling algorithm
9. What is Clipping ? Why is it useful in computer graphics ? Write algorithm for polygon clipping .
10. Explain 3D composite Transformation with examples.
11. Write detailed note on the following :
 - (a) Solid modelling
 - (b) Various tools of graphics in GUI