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Total No. of Questions : 10]

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SP-697

M.Sc. (Final) Examination, 2021

COMPUTER SCIENCE

(For Due and Imp. Students Only)

Paper - MCS-202

(Computer Graphics)

Time : 1½ Hours]

[Maximum Marks : 100

Note :- Attempt any *five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit-I

1. (a) Write the advantages of Interactive Graphics.
(b) How does Frame Buffer work ?
(c) Where do we use random scan displays ?
(d) Write any *five* applications of Computer Graphics. 5×4=20
2. Write short notes on each of the following with suitable examples :
(a) Input devices of Computer Graphics
(b) Raster Scan Display Systems

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(c) Passive Graphics

(d) Output devices of Computer Graphics 5×4=20

Unit-II

3. (a) Write the steps for any line drawing algorithm.

(b) Explain any polygon drawing algorithm 10,10

4. (a) A circle is a symmetrical figure, any circle generating algorithm can take advantage of this properly to plot right points by calculating very few points only. Justify the same in short by suitable figure.

(b) Find the pixel positions along a straight line between A(5,10) and B(10,10) using DDA algorithm. 10,10

Unit-III

5. (a) Explain the concept of B-spline and Bezier Curves in detail.

(b) Explain any polygon clipping algorithm. 10,10

6. Apply following transformations in given sequence/order on a triangle having vertices (1,1), (1, 3) and (5, 1). Show the diagram of original diagram and transformed triangle in 2-D plane.

(a) Translate the object in X-direction by 4 units and in Y-directions by 5 Units (in negative direction).

(b) Apply the uniform scaling by a factor of 2. 10×2=20

Unit-IV

7. Apply translation (of your choice) and rotation (of your choice) on an object with end points (0, 1, 1) and (5, 6, 7) in 3-D. Show the result. 20

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8. Write short notes on each of the following with examples/applications :

(a) Depth Buffer Method

(b) Back-face Deletion

(c) Depth Sorting Method

(d) Types of Projection

5×4=20

Unit-V

9. Describe each of the following in detail :

(a) Graphic Standards

(b) Solid Modelling

10×2=20

10. (a) Explain various color models in detail.

(b) Explain regularized boolean set operations in modelling.

10×2=20