UG Even Semester (CBCS) Exam., May—2017

COMPUTER SCIENCE

(4th Semester)

Course No. : MCS–401 (C)

(Computer Graphics)

Full Marks : 75

Pass Marks : 30

Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer **five** questions, taking **one** from each Unit

UNIT—I

1. *(a)* Compare raster scan display and random scan display. 8

(b) Explain CGA and VGA. 3+3=6

(c) What do you mean by a pixel? 1

2. *(a)* Compare RGB model and CMY model. 8

(b) Explain VRAM and display controller. 6

(c) What is CRT? 1

UNIT—II

3. *(a)* Explain the following : 5+5=10

(i) DDA line drawing algorithm

(ii) Bresenham's circle algorithm

(b) Write the flood-fill algorithm using 4-way connectivity. 5

4. *(a)* Trace a line (2, 3) to (8, 7) using Bresenham's algorithm. 5

(b) Trace the circle of radius *r* 5 using Bresenham's algorithm. 5

(c) Explain scan conversion. 5

UNIT—III

5. *(a)* Describe 2D transformations. 10

(b) What is composite transformation? 5

6. *(a)* What do you mean by shear? Explain. 5

(b) Describe 2D inverse transformation. 10

UNIT—IV

7. Explain 3D transformations with matrix representations. 15

8. Explain 3D rotations and its cases. 15

UNIT—V

9. *(a)* Write the properties of octree. 5

(b) Explain surface rendering. 5

(c) Write a few points on Maya software. 5

10. *(a)* Compare orthographic and perspective projection. 5

(b) Explain 3D viewing pipeline. 5

(c) Write a few points on animation movie. 5

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