

C 1140

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Name.....

Reg. No.....

**SIXTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION
MARCH 2021**

Computer Science

BCS 6B 16 (D)—COMPUTER GRAPHICS

(2017 Admissions)

Time : Three Hours

Maximum : 80 Marks

Section A

Answer all questions.

Each question carries 1 mark.

1. Name the technique used in Computer Graphics to modify or interpret existing pictures.
2. What is the unit used to control the operation of the display device in a Raster scan system called ?
3. Expand the acronym DDA.
4. Which is the transformation that alters the size of an object ?
5. "Transformation products may not be commutative". State whether the statement is True or False.
6. What values has to be assigned to scaling factors to produce Uniform scaling ?
7. Name the transformation which maps a part of a world-coordinate scene to device coordinates.
8. How many possible cases exist when processing vertices in sequence around the perimeter of a polygon ?
9. Name the method for explaining the properties or behaviour of colour within some particular context.
10. Name the term used to refer collectively the two properties describing colour characteristics.

(10 × 1 = 10 marks)

Section B

Answer at least four questions.

Each question carries 4 marks.

All questions can be attended.

Overall Ceiling 16.

11. Differentiate between Bitmap and Pixmap.
12. What are the two approaches to area filling on raster scan systems ?

Turn over

13. Define Shear. What are the two common shearing transformations ?
14. Differentiate a Window with a Viewport.
15. Write a short note on GIMP.

(4 × 4 = 16 marks)

Section C

*Answer at least **four** questions.
Each question carries 6 marks.
All questions can be attended.
Overall Ceiling 24.*

16. Briefly explain the application of Computer Graphics in Education and Training.
17. Define Scan-conversion. How is it applied in Line drawing ?
18. Derive the Rotation Matrix for an object through angle θ about the pivot point (x, y) .
19. Briefly explain the two-dimensional viewing-transformation pipeline.
20. Briefly describe CMY color model.
21. Briefly describe different properties of light.
22. Write the algorithm for Cohen-Sutherland line clipping method.
23. Briefly explain Random scan display.

(4 × 6 = 24 marks)

Section D

*Answer any **two** question.
Each question carries 15 marks.*

24. Explain the basic design of a Cathode ray tube with a diagram.
25. Briefly explain the algorithm used for Scan conversion of line and circle.
26. Write a short note on basic geometric transformations applied to an object,
27. Explain Window to Viewport co-ordinate transformation.
28. Explain the various steps required for manipulating images using GIMP.

(2 × 15 = 30 marks)

