

Roll No.

BCA-401(N)

B. C. A. (Fourth Semester)
EXAMINATION, May, 2017

(New Course)

Paper First

COMPUTER GRAPHICS AND MULTIMEDIA
APPLICATION

Time : Three Hours] [Maximum Marks : 75

Note : Attempt questions from all Sections as directed.

Inst. : The candidates are required to answer only in serial order. If there are many parts of a question, answer them in continuation.

Section—A

(Short Answer Type Questions)

Note : All questions are compulsory. 3 each

1. (A) Define Computer Graphics. List some application areas.
- (B) Write a note on Interactive Graphics.
- (C) Write the difference between DDA and Bresenham's line algorithm.
- (D) Consider the line from (5, 5) to (13, 9). Use Bresenham's line algorithm to rasterize this line.

- (E) Explain the advantage and disadvantages of plasma panel display.
- (F) Define raster scan display.
- (G) What do you understand by the term clipping ?
- (H) Explain the process of the curve drawing.
- (I) Explain the term "Kinematics of Controlling Animation".

Section—B

(Long Answer Type Questions)

Note : Attempt any *two* questions. Each question carries 12 marks.

- 2. (a) Explain *three* hardware devices used for graphics application development.
- (b) Write the midpoint circle drawing algorithm.
- 3. (a) Differentiate between Beam penetration and Shadow mask method.
- (b) Perform a counterclockwise 45° rotation of triangles A (2, 3), B (5, 5), C (4, 3) about a point (1, 1).
- 4. (a) Find the normalization transformations that maps a window whose lower left corner in at (1, 1) and upper right corner at (3, 5) onto a viewport at (0, 0) and upper right corner (1, 1).
- (b) A viewport that has lower left corner at (0, 0) and upper right corner $\left(\frac{1}{2}, \frac{1}{2}\right)$.

5. (a) What is Rotation ? How rotational matrix for clockwise and counterclockwise can be formulated ?
- (b) Explain the translation in detail. Write a program for translation.

Section—C

(Long Answer Type Questions)

Note : Attempt any *two* questions. Each question carries 12 marks.

6. (a) Explain Sutherland-Cohen line clipping algorithm in details.
- (b) What is reflection in 2D transformation ? Explain in detail with an example.
7. (a) What is Bezier Curves ? Explain its properties in details with diagram.
- (b) Construct the Bezier curve of order 3 and with 4 polygon vertices A (1, 1), B (2, 3), C (4, 3) and D (6, 4).
8. Explain the term solid modelling. What are the Boolean operations performed on the solids ? Also explain constructive solid geometry.
9. What is Multimedia ? What does multimedia authoring tools usually provide ? There are *three* types of authoring tools. Explain each type in detail.