

Roll No.

67106

MCA 3rd Semester (CBCS Scheme)

w. e. f. Dec. 2017-18

Examination – November, 2018

COMPUTER GRAPHICS

Paper : 17MCA33C1

Time : Three Hours]

[Maximum Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting *one* question from each Unit. Question No. 1 is *compulsory*. All questions carry equal marks.

1. (a) What are color models ? Indicate their significance. $2 \times 8 = 16$
- (b) How flickering can be overcome ?
- (c) What is animation ? State its significance.
- (d) Differentiate between parallel and perspective projection.
- (e) What are concave and convex polygons ?
- (f) What are viewing coordinates ? Illustrate.

- (g) What is window-to-viewport coordinate transformation ?
- (h) What is reflection transformation ? State its relevance.

UNIT – I

2. (a) What is Computer Graphics ? What are its types ? Indicate the importance of each type by giving suitable examples 8
- (b) What raster scan systems ? What are their characteristics ? How are these systems different from random scan systems ? Illustrate. 8
3. Explain the following :
 - (a) Graphics Software Standards 8
 - (b) Color Ck Trmonitors 8

UNIT – II

4. (a) What is 2-D transformation ? Find out the new coordinates of the triangle A(1, 1), B(4,3), C(0, 1) after it has been magnified to double its size. 8
- (b) Which raster locations would be chosen by Bresenham's algorithm- when scan-converting a line from screen coordinate (1, 1) to screen coordinate (8, 5). 8
5. Explain the following :
 - (a) Anti-aliasing 8
 - (b) Shearing Transformation 8

UNIT – III

6. (a) What is scan-line polygon-fill algorithm ? How does it work ? Illustrate. 8
- (b) What is Window to Viewport transformation ? How is it carried out ? Illustrate through a suitable example. 8
7. Explain the following :
 - (a) Flood-Fill algorithm 8
 - (b) Sutherland-Hodgman's Polygon clipping algorithm 8

UNIT – IV

8. (a) What are components of multimedia ? Enumerate the steps involved in authoring process. 8
- (b) What are Bezier surfaces ? How are these represented ? Illustrate their relevance in graphics. 8
9. Explain the following :
 - (a) B-Spline Curves 8
 - (b) Features of MatLab 8