No. of Printed Pages : 03 **Roll No. .....**

DD-681

M.C.A. EXAMINATION, Dec. 2017

(Fourth Semester)

(B. Scheme) (Re-appear Only)

(MCA)

MCA-502

COMPUTER GRAPHICS

Time : 3 *Hours*] [*Maximum Marks :* 75

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

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

Unit I

1. (a) What do you understand by Computer Gaphics ? Explain major areas of Computer Graphics. **7**

(b) What are the characteristics of a good line drawing algorithms ? Explain Bresenham's line drawing algorithm. **8**

2. (a) Explain Bresenham's circle drawing algorithm. **7**

(b) Find out the pixel location approximating the second octant of circle having centre at O(0, 0) and radius 8. **8**

Unit II

3. (a) Explain Cohen-Sutherland line clipping algorithm with its advantages and disadvantages. **8**

(b) What do you understand by 2-dimensional viewing pipeline ? Explain window to view port mapping. **7**

4. (a) Explain Sutherland-Hodgeman polygon clipping algorithm. **8**

(b) Write the 3-dimensional transformation matrix for translation and scaling. **7**

Unit III

5. What is the problem of projection ? Explain basic methods and types of projections in detail. **15**

6. Write short notes on the following : **15**

(a) z-buffer algorithm

(b) Area sub-division algorithm.

Unit IV

7. What do you mean by illumination model ? Explain various illumination models. **15**

8. (a) What is the concept of B-splice curves ? Explain. **7**

(b) What do you mea by interpolation ? Illustrate the utility of interpolation method. **8**