

MCA-301
December – Examination 2021
MCA (IIIrd Year) Examination
COMPUTER GRAPHICS
Paper : MCA-301

Time : 1½ Hours]

[Maximum Marks : 80

Note :- The question paper is divided into two Sections A and B. Write answers as per the given instructions.

Section-A

4×4=16

(Very Short Answer Type Questions)

Note :- Answer any *four* questions. As per the nature of the question delimit your answer in one word, one sentence or maximum up to **30** words. Each question carries 4 marks.

1. (i) How to convert RGB to CMY color model ?
- (ii) What are different properties of phosphorus ?
- (iii) Define line clipping. Give an example of it.
- (iv) What is affine transformation ?
- (v) What is beam penetration method ?
- (vi) What will be Homogeneous form of point (9, 6, 3 3) ?
- (vii) Give the advantages of direct view storage tube.
- (viii) Write boundary fill algorithm to fill 4 connected region.

Section-B **4×16=64**

(Short Answer Type Questions)

Note :- Answer any *four* questions. Answer should not exceed **200** words. Each question carries 16 marks.

2. Write difference between Raster scan system and Random scan system.
3. Explain Cohen-Sutherland line clipping algorithm with region code details.

4. What is the difference between parallel and perspective projection ? Explain with suitable example.
5. What is ray casting algorithm for hidden surface removal ? Explain mathematically how do we find which plan is visible using Ray Casting algorithm.
6. Find out the final co-ordinates of a figure bounded by the co-ordinates (1, 1), (3, 4), (5, 7), (10, 3); when rotated about a point (4, 8) by 60° in clockwise direction.
7. Explain refresh cathode ray tube.
8. Given :
 $B_0[1, 1], B_1[2, 3], B_2[4, 3], B_3[3, 1]$
are the vertices of Beizer polygon, determine seven points on Beizer Curve.
9. Explain text attributes of character in detail.