

MCA-301
June - Examination 2019
MCA 3rd Year Examination
Computer Graphics
Paper - MCA-301

Time : 3 Hours]

[Max. Marks :- 80

Note: The question paper is divided into three sections A, B and C. Write answers as per the given instructions.

Section - A

8 × 2 = 16

(Very Short Answer Questions)

Note: Answer **all** 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 2 marks.

1. (i) What do you mean by Graphics API? Name any two Graphics API
- (ii) What is Frame?
- (iii) Convert given colour value to CMY color mode where R=.8 G = .31 B = .14?
- (iv) Name any two Line Clipping Algorithms.
- (v) What is Spline?
- (vi) What is Aspect Ratio? What is its unit of measurement?

(vii) Define persistence in terms of CRT Phosphorous.

(viii) How you define Intensity?

Section - B

$4 \times 8 = 32$

(Short Answer Questions)

Note: Answer **any four** questions. Each answer should not exceed 200 words. Each question carries 8 marks.

- 2) What is Text Clipping? Explain various techniques used to provide text clipping in Computer Graphics.
- 3) Write boundary fill algorithm to fill a, 4-connected region. Also explain with suitable example.
- 4) Illustrate the following illumination models with suitable diagram: Ambient Light and Diffuse Reflection.
- 5) Explain in brief Cohen-Sutherland line clipping algorithm with an example.
- 6) Describe the functionalities of Refresh Cathode Ray Tube with suitable diagram.
- 7) What is the difference between parallel and perspective projection. Explain with suitable example.
- 8) Differentiate between Impact and Non-impact printers.
- 9) What is Ray Casting algorithm for hidden surface removal? Explain mathematically how do we find which planes is visible using Ray Casting algorithm.

Section - C**2 × 16 = 32**

(Long Answer Questions)

Note: Answer **any two** questions. You have to delimit your each answer maximum up to 500 words. Each question carries 16 marks.

- 10) Explain the Bresenham's line drawing algorithm with suitable example.
- 11) What is composite transformation? Explain two successive translation and rotations with the final composite transformation matrixes in 3D.
- 12) Write a short note on:
 - (i) Z-buffer Algorithm
 - (ii) Phong Shading
- 13) What is Computer Animation? Explain different types of animation tools.
