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Roll No

MCADD-504

M.C.A. (Dual Degree/Integrated Course), V Semester

Examination, May 2018

Computer Graphics

Time : Three Hours

Maximum Marks : 70

- Note:* i) Answer any five questions out of eight questions.
ii) All questions carry equal marks.

1. a) What is Computer Graphics? Write down its applications.
b) Explain the working of CRT with the help of labelled diagram.
2. a) Explain Mid Point circle drawing algorithm. Find the coordinates of circle of radius 5 and centre point (0, 0) with this algorithm.
b) What is Polygon Filling? Differentiate between boundary fill and flood fill algorithm.
3. a) A mirror is placed such that it passes through (2, 0) and (0, 2). Find the reflected view of a triangle with vertices (3, 4), (5, 5) and (4, 7) in this mirror.
b) Give a brief note on character generation.

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4. a) Find the transformation matrix which converts a square with a diagonal $[(3, 4) (8, 9)]$ to a unit square at the origin.
b) Find the normalization transformation matrix for a window of radius 4 units and centre at origin to the viewport of radius 1 unit and centre at $(1, 1)$.
5. a) Enumerate the difference between viewport and window.
b) Explain Sutherland Hodgeman algorithm for polygon clipping with an example.
6. a) Differentiate between parallel and perspective projection?
b) Explain the terms projection plane, view plane and view volume with reference to 3D graphics.
7. a) Explain the advantages and disadvantages of B-spline surface over Bezier surface.
b) Write down the method to rotate any object about on arbitrary axis in space.
8. a) Differentiate between Phong Shading and Gouraud Shading?
b) Write short notes:
 - i) Specular Reflection
 - ii) RGB color model
