(DMCA206)

Total No. of Questions : 18] [Total No. of Pages : 02

M.C.A. DEGREE EXAMINATION, MAY – 2018

Second Year

COMPUTER GRAPHICS

Time : 3 Hours **Maximum Marks :70**

SECTION - A

Answer any three of the following questions. *(3 × 15 = 45)*

Q1) Draw the architecture and explain working of raster scan display system.

Q2) Using midpoint Ellipse generation algorithm, generate points on the ellipse with center as origin, major axis is 8 units and minor axis is 6 units.

Q3) A triangle is defined by P (2, 2), Q (4, 2) and R(5, 5). Find the transformed coordinates after 90^o clockwise rotation followed by reflection about line y = -x.

Q4) Explain about parallel and perspective projections and derive its matrices.

Q5) What is depth buffer method? Write and explain the steps of a depth buffer algorithm.

SECTION - B

Answer any five of the following questions. *(5 × 4 = 20)*

Q6) What is DVST? List merit and demerit of DVST.

Q7) Explain scan line polygon filling algorithm with example.

Q8) Explain about line clipping and polygon clipping.

Q9) Derive transformation matrix for 2D rotation.

Q10) What is scaling transformation? Prove that two scaling transformation commute that is $S_1 . S_2 = S_2 . S_1$.

Q11) Explain reflection with respect to any plane in 3D transformations.

Q12) Explain the Bazier's curves and surfaces.

Q13) Briefly explain Z-buffer visible surface determination algorithm.

SECTION - C

Answer all of the following questions. *(5 × 1 = 5)*

Q14) Define scan conversion.

Q15) Define aspect ratio.

Q16) Define windowing.

Q17) What is meant by hidden surface?

Q18) Define quadratic surfaces.