

This question paper contains 2 printed pages.]

Your Roll No.

1727

A

MCA / II Sem.
Paper MCA - 203 Computer Graphics
(Admissions of 2009 and onwards)

Time : 2 Hours

Maximum Marks : 50

(Write your Roll No. on the top immediately
on receipt of this question paper.)

Attempt all questions.

Parts of a question must be answered together.

1. Using Mid Point Algorithm for scan-conversion give the location of first five pixels for the ellipse $\frac{x^2}{8^2} + \frac{y^2}{6^2} = 1$ in region bounded by lines $x = 0$ and $2 \cdot 6^2 x = 2 \cdot 8^2 \cdot y$. 5
2. How can we achieve C^0 , C^1 continuity for two Bezier cubic curve sections at the point of intersection of two curves. 3
3. Define Basis spline curves. How can blending functions for B-spline curves be defined? Explain to the point. 4
4. What do you mean by knot value? Write a knot vector for an open uniform B-spline. 3

[P.T.O.]

5. (a) Write the four characteristics of a fractal. How are Mandelbort sets generated ? 4
- (b) Give the various regions in NLN line clipping algorithm for three distinct positions of points. 3
6. What are various characteristics which a representation scheme must have for valid solid modelling. 4
7. (a) How are regularized Boolean set operation written in terms of ordinary Boolean set operations? Explain. 5
- (b) What for do we need octree. Explain with an example. 4
8. Explain Depth-sorting method detecting visible surfaces. 5
9. What do you mean by intensity attenuation? Derive an expression for intensity at a point with multiple sources of light which includes diffuse and specular reflections with attenuation. 5
10. Describe HSV color model explaining HSV hexcone and its cross-section. 5