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SECOND SEMESTER M.Sc. DEGREE EXAMINATION, AUGUST 2006

Computer Science

CS 201—ADVANCED COMPUTER GRAPHICS

(2005 admissions)

Time Three Hours

Maximum : 80 Marks

Part A

Answer any five questions.
Each question carries 8 *marks.*

1. Explain the working of colour CRT monitor with figure.
2. Define tilting as a rotation about the x-axis followed by a rotation about the y-axis. Find the tilting matrix.
3. Explain the difference between co-ordinate transformation and Domain transformation.
4. Explain the difference between Translation, Scaling and Rotation with figures.
5. Analyze the effect of B-spline of having in sequence four collinear control points.
6. Explain how 3-d curve can be described to a Graphics system.
7. Discuss the need for polling tasks and event queue.

(5 x 8 = 40 marks)

Part B

Answer any **four** *questions.*
Each question carries 10 *marks.*

8. Devise a procedure for rotating an object that is represented in an Octree structure.
9. Write an algorithm for forward difference and recursive subdivision curve display procedure. Compare the execution time.
10. Explain the different techniques for extracting the boundaries of a given object.
11. Explain how virtual-reality systems can be used in design applications ?
12. What is perspective projection ? Derive the matrix of standard perspective projection.
13. Discuss the significance of hidden surface removal. Differentiate object and image space methods.

(4 x 10 = 40 marks)