

17221

Name: .....

Reg.No .....

**SECOND SEMESTER M.Sc. DEGREE EXAMINATION, JULY 2011**

COMPUTER SCIENCE

**CSC2C01 Advanced Computer Graphics**

**Time : 3 Hours**

**Maximum Weightage : 36**

**PART A**

*Answer all questions. Each question carries 1 weight.*

1. Define parallel projection.
2. What do you mean by surface rendering?
3. What are the polygon types on **OpenGL**?
4. Give the matrix representation for 3D translation.
5. Give the matrix representation for reflection of points relative to **XY** plane.
6. What do you mean by "**Quaternions**"?
7. Define **Bloppy** objects.
8. Compare object space method and image-space method.
9. List any four **OpenGL** routines for drawing 3-D objects.
10. Explain the terms view plane and view reference point.
11. Write matrix for general parallel projection transformation.
12. What do you mean by texture mapping?

[12 X 1 =12 Weights]

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**PART B**

Answer any six questions. Each question carries 2 weights.

13. Discuss the **OpenGL** API.
14. With suitable examples/illustration explain 3D scaling.
15. Discuss 3D rotation.
16. Prove that the multiplication of 3D transformation matrices for any two successive rotations about any one of the coordinate axis is commutative.
17. Explain "sweep representation".
18. Write notes on **Bezier** curves.
19. Explain "light sources" in 3D shading.
20. Explain 3D viewing pipeline.
21. Write notes on bit and pixel operations.

[6 X 2 =12 Weights]

• [Turn Over]

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### PART C

Answer any three questions. Each question carries 4 weights.

22. Discuss 3D display methods.
23. Give **OpenGL** implementation of 3D composite transformation.
24. Give a detailed account of general 3D rotation.
25. Explain in detail depth buffer and A-buffer methods.
26. Give an account of projections in **OpenGL**.
27. Write notes on sampling and **aliasing** techniques.

[3 X 4 = 12 Weights]

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