

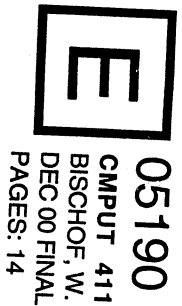
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CMPUT 411: Introduction to Computer Graphics Final Exam, December 13, 2000

Each question is worth 8 points. Note that although there is one question per page the answer may be considerably shorter.

1. What are hard shadows and describe an algorithm for generating them.



2. Discuss how to deal with transparency of materials.

3. What techniques are available for improving the efficiency of ray tracing algorithms?

4. Describe the idea of bump mapping of surfaces.

5. Describe the two ways in which color is encoded in the human visual system, and discuss their respective properties.

6. Describe additive and subtractive color mixing and their differences.

7. How is continuity between curve segments described and controlled.

8. Describe Bézier curves.

9. What are NURBS?

10. Describe three approaches to solid modeling and list their respective advantages and disadvantages.

11. What are regularized Boolean set operators used in solid modeling.

12. Describe how to do in-betweening (interpolation between frames) in animation, and discuss the major problems.

13. Describe two different methods for clipping lines in 2D.

14. Sketch the z-Buffer algorithm and discuss briefly its advantages and disadvantages over other visible surface algorithms.