Uva Wellassa University, Sri Lanka
End Semester Examination – June/July 2010
CST 304-2 Computer Graphics
Time: Two (02) hours

Total 05 Questions
Answer all questions

Question 1.

(a) What is Computer Graphics?
How do you explain the existing areas of study in Computer Graphics to another person?

(b) What is Computer Vision? Explain it using suitable examples.

(c) Compare and contrast Vector Graphics and Raster Graphics.

(d) Give an account on different color models available for the use of graphic designers and explain when to use what.

(e) What is meant by a "pixel"? Explain why we do not need more than 24 bits per pixel to display graphics having natural colors.

(20 marks)

Question 2.

(a) What is meant by graphic workstation? List a modern day PC hardware configuration needed to develop high quality graphics for the print industry.

(b) What are the differences between static RAMs and dynamic RAMs?

(c) Explain the functionality of Graphics Interface Card with a GPU in it.

(d) What is fire-wire? Compare and contrast fire-wire with USB 2.0.

(e) "CRT displays are harmful to human beings." This is a quote appeared in a newspaper. Write your opinion about the above quote within a technological framework.

(20 marks)

Question 3.

(a) What is Projection? Explain in your own terms.

(b) What are the two types of "parallel projections"? Briefly explain.

(c) Rendering can be done using two ways, Hardware or Software. Explain how it is done in each case.

(d) What is Rendering Pipeline? Briefly explain.

(a) Radiosity and Raytracing are two methods that can be used to develop stunning images. Explain the use of each method in different situations.

(20 marks)

Question 4.

(a) What are the three basic transformations in 2D geometric transformation?

(b) State the matrix representation of above three transformations.

(c) Find the matrix representation for rotation around an arbitrary point in 2D geometric transformation.

(d) Find the matrix representation for reflection on X-axis.

(e) Find the transformation matrix for rotation in 3D geometric transformation.

(20 marks)

Question 5.

Write short notes about the following topics. Use diagrams where appropriate.

(a) OpenGL architecture.

(b) Conceptual model of the 3D viewing process.

(c) Basic PC system architecture.

(d) Deployment of Quadtrees.

(20 marks)