Code: 9A05503

R09

B.Tech IV Year I Semester (R09) Regular & Supplementary Examinations December 2015

COMPUTER GRAPHICS

(Computer Science and Systems Engineering)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

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1 (a) What is Pixel? In a 24 bit plane color frame buffer with 10 bit wide look up tables for each of three colors, how many colors are possible at a given instant?
(b) What are the hardware and software requirements of computer graphics?

2 (a) Write the steps required to plot a line whose slope intercepts in between 0 and 45 degree using slope intercept equation.
(b) Explain Anti-aliasing technique giving a suitable illustration.

3 (a) Show that reflection about the line $y = x$ is attained by reversing the coordinates $M_L(x, y) = (y, x)$.
(b) Explain window to viewpoint mapping.

4 (a) What are PHIGS? What is the advantage? What are the limitations of hierarchy modeling on PHIGS?
(b) Explain structure network editing for dynamic effects in PHIGS.

5 (a) With a neat sketch, explain the Bezier-Berstein surface with parametric equation.
(b) Explain terrain generation using triangular mesh network.

6 (a) Explain primitive instancing and sweep representation when applied to solid objects.
(b) Write a brief note on 'Constructive solid geometry'.

7 (a) Differentiate the achromatic and color 3D models. What is difference between y in CMY and Y in YIQ? Draw neat sketches.
(b) What are the basic characteristics of light? Explain the trichromatic generalization theory.

8 Write a short note on:
(a) Illumination models.
(b) Recursive ray tracing.
(c) Radiosity method.
(d) Shadows.

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