

B.Tech Sem – VI (2007 Course) (Computer Engg.) : SUMMER - 2019
SUBJECT : ADVANCED COMPUTER GRAPHICS

Day : Friday
Date : 31/05/2019

S-2019-3116

Time : 02.30 PM TO 05.30 PM
Max. Marks : 80

N.B.:

- 1) **Q. No. 1 and Q. No. 5 are COMPULSORY.** Out of the remaining attempt **ANY TWO** questions from Section – I and Section – II.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answer to both the sections should be written in **SAME** Answer book.
- 4) Use of non programmable **calculator** is **ALLOWED**.
- 5) Draw neat and labeled diagrams **WHEREVER** necessary.
- 6) Assume suitable data, if necessary.

SECTION - I

- Q.1** a) How to generate thick line using DDA line generation algorithm? (05)
b) Why scan conversion is needed? Explain with real time scan conversion technique. (05)
c) How to perform shading with respect to reference line? (04)
- Q.2** a) Raster a line between points A (0, 0) and B (-6,-6) using Bresenham's line generation algorithm. (07)
b) What is aliasing effect? What are anti-aliasing techniques are used to minimize effect of aliasing? (06)
- Q.3** a) How run length encoding technique used for scan conversion? (07)
b) Differentiate between seed fill algorithm with scan line algorithm for polygon filling. (06)
- Q.4** a) How to perform 3 D rotation with an arbitrary axis? (07)
b) Perform basic 2D transformations on a triangle with coordinates A (1, 1), B (3, 1) and C (2, 4). (06)

SECTION - II

- Q.5** a) Enlist various properties of Bezier Curve. (05)
b) Compare VGA with SVGA. (05)
c) What is use of Blending function? Explain with an example. (04)
- Q.6** a) Differentiate between Phong and Gourand shading models with an example. (07)
b) How Z-Buffer algorithm is used for removal of hidden surfaces? (06)
- Q.7** a) Explain conceptual framework interactive graphics with a neat block diagram. (07)
b) Differentiate between CMY, HSV and RGB color models. (06)
- Q.8** a) How to generate Hilbert and Koch curve of 3rd iteration? (07)
b) What is simulator? Explain the process of simulator and animation in detail. (06)

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