

B.TECH SEM – VI (2007 COURSE) (COMPUTER ENGG.) :
WINTER - 2017

SUBJECT: ADVANCED COMPUTER GRAPHICS

Day: **Friday**
Date: **24/11/2017**

W-2017-2508

Time: **10.00 AM TO 01.00 PM**
Max. Marks: 80

N.B.:

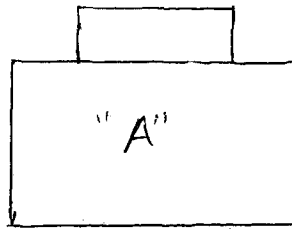
- 1) **Q. No. 1 and Q. No. 5** are **COMPULSORY**. Out of the remaining attempt any **TWO** questions from each section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer book.
- 4) Draw neat labeled diagrams **WHEREVER** necessary.

SECTION-I

- Q.1**
- a) Explain different methods of character generation? (05)
 - b) Write scan line algorithm for polygon filling. (05)
 - c) What is viewing transformation? (04)

- Q.2**
- a) Raster a line using Bresenham's algorithm from (4, 4) to (9, 13). (07)
 - b) Which algorithm is suitable for circle drawing? Justify your answer. (06)

- Q.3**
- a) What do you understand by polygon filling? Develop an algorithm to fill polygon "A" (07)



- b) What is a segment table? Explain different data structures to implement segment table? (06)

- Q.4**
- a) What is composite transformation? Explain how homogeneous coordinates are required for it. (07)
 - b) Find out final coordinates of triangle bounded by coordinates (0, 2, 1) (2, 3, 0) and (1, 2, 1) rotated by 30° in anticlockwise direction and scaled by 2 units in both direction. (06)

SECTION-II

- Q.5**
- a) Explain Diffuse illumination and Specular reflection. (05)
 - b) Differentiate between VGA, SVGA. (05)
 - c) List various applications of computer graphics in scientific and business field. (04)

- Q.6**
- a) What are the different methods available for shading a polygon? (07)
 - b) What are fractals? Explain how fractal line algorithm can be used for generating fractal surface. (06)

- Q.7**
- a) With the help of diagram explain working of CRT display and controller. (07)
 - b) Write a note on: i) scanners ii) Light pen (06)

- Q.8**
- a) What are different basic primitives of Graphics kernel System? (07)
 - b) Explain concepts of X- windows with example. (06)