

**B.TECH SEM – V (2007 COURSE) (INF. TECH.) : WINTER - 2017**  
**SUBJECT : PROCEDURAL ELEMENTS OF COMPUTER GRAPHICS**

Day : **Thursday**  
Date : **18/01/2018**

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

**W-2017-2472**

**N.B.:**

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

**SECTION – I**

- Q.1** a) List different scientific and engineering applications of Computer Graphics. [05]  
b) Discuss Text Clipping in detail. [05]  
c) What are Reflections? Discuss the role of Reflections in Computer Graphics. [04]
- Q.2** a) List and explain different input devices for Operator / User Interaction. [07]  
b) Compare and contrast: LCD and LED displays. [06]
- Q.3** a) What is Polygon Filling? Describe in detail the implementation of Scan Line algorithm. [06]  
b) How Circle and Polygon clipping is achieved? List different methods. [07]
- Q.4** a) Why Homogeneous Coordinates are required? Give Homogenous Coordinates for Scaling, Translation and Rotation. [06]  
b) Explain different data structures for display file structure. [07]

**SECTION – II**

- Q.5** a) What are segments? Discuss segment table in detail. [05]  
b) Explain Fractal Lines and Surfaces. [05]  
c) What is X-Windows? Discuss the concept of X-Windows. [04]
- Q.6** a) Explain methods Of Segment Creation, Deletion and Renaming. [06]  
b) Justify why Sutherland-Hodgeman Polygon Clipping algorithm works only for Convex Clipping Region. [07]
- Q.7** a) Discuss the use of Segments in Animation. [07]  
b) What is OpenGL? How different features of OpenGL are useful for animation? [06]
- Q.8** a) Enlist different characteristics of good User Interface. [07]  
b) Explain JPEG file format in detail. [06]

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