

**B.Tech. SEM -IV ( Computer) 2014 Course (CBCS) : WINTER - 2018**

**SUBJECT: COMPUTER GRAPHICS AND VISUALIZATION**

Day: Wednesday  
Date: 14/11/2018

**W-2018-2338**

Time: 02.30 PM TO 05.30 PM  
Max. Marks: 60

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**N.B:**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the right indicate **FULL** marks.
  - 3) Assume suitable data if necessary.
  - 4) Use of non programmable **CALCULATOR** is allowed.
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**Q.1** Explain limitations of circle drawing algorithm in detail. Also explain error factor with derivation. (10)

**OR**

- a) Define vector generation. Explain the problems related to vector generation. (05)
- b) Discuss in detail about frame buffer along with its importance. (05)

**Q.2** Compare between various polygon filling methods. (10)

**OR**

Elaborate about windowing and clipping. How to perform interior and exterior clipping explain. (10)

**Q.3** What is homogenous co-ordinate system? What is the need for this system in transformations? (10)

**OR**

Describe following transformations with respect to 2D, (10)

- i) Scaling
- ii) Rotation
- iii) Translation
- iv) Shearing

**Q.4** Why hidden surfaces algorithms are needed? Explain any two methods used for removing hidden surfaces. (10)

**OR**

- a) Write short note on: CMY color model (10)
- b) Explain Gourand method of shading. (10)

**Q.5** What is segment table? Explain various operations that can be performed on a segment table. (10)

**OR**

Compare and contrast between conventional and computer based animation. Also enlist various tools are used to generate animation. (10)

**Q.6** What is interpolation? Explain Lagrange interpolation method. (10)

**OR**

Write short notes on fractal lines and fractal surfaces. Give two applications of each. (10)

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