

24253

B.Tech. 5<sup>th</sup> Semester (F) Scheme (CS & IT)

Examination, December-2018

COMPUTER GRAPHICS

Paper-CSE -303-F

*Time allowed : 3 hours]*

*[Maximum marks : 100*

*Note : Attempt 5 questions selecting one question from each section. Question No. 1 is compulsory.*

1. (a) Explain points and lines by giving a suitable example. 5
- (b) Write short note on window and viewport. 5
- (c) What are various operations that can be applied on image. 5
- (d) What is the importance of hidden surface removal? 5

**Section-A**

2. Explain with diagram the display processor for a random and vector scan display device. 20
3. (a) Explain Bresenham's line drawing algorithm. 10
- (b) Explain circle drawing algorithm using polar co-ordinates. 10

**Section-B**

4. (a) Explain Cyrus Beck line clipping algorithm. 10
- (b) Write and explain 4-bit code algorithm for clipping line. 10
5. Explain two dimensional transformation matrix for translation, scaling and rotation. 20

24253-P-2-Q-9 (18)

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**Section-C**

6. What do you mean by projection ? Describe different types of projection with examples. Also explain what are various projection anomalies. 20
7. (a) Define hidden surface removal. Explain z-buffer algorithm for hidden surface removal. 10
- (b) Describe scan-line algorithm for hidden surface removal. 10

**Section-D**

8. (a) Define the term shading. Explain Gouraud shading and phong shading model. 10
- (b) What is image? Also explain image filtering. 10
9. (a) What is bezier curve? Describe various properties of bezier curve. 10
- (b) Discuss interpolation method for curve generation. Also discuss about parametric representation of surface. 10