

**II B. Tech I Semester Supplementary Examinations, May - 2018**  
**COMPUTER GRAPHICS**  
 (Computer Science & Engineering)

Time: 3 hours

Max. Marks: 70

- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)  
 2. Answer **ALL** the question in **Part-A**  
 3. Answer any **FOUR** Questions from **Part-B**
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**PART -A**

1. a) What is a View port (2M)
- b) Distinguish the parallel projection and Perspective Projection view volumes. (3M)
- c) Write about the primary and secondary colors. (2M)
- d) List the problems with interpolated shading methods. (3M)
- e) Write about Julia sets. (2M)
- f) Where does the ray  $r(t)=(3,2,3) + (-3,-2,-3)t$  hit the generic sphere? (2M)

**PART -B**

2. a) Devise an algorithm for adjusting the height and width of characters defined as rectangular grid patterns. (7M)
- b) Write a routine to split a concave polygon using the vector method. (7M)
3. a) Write a routine to convert the polygon definition of a three-dimensional object into an octree representation. (7M)
- b) Derive the matrix form for the cubic Bezier curves. (7M)
4. a) Explain in detail about the methods of controlling animation. (7M)
- b) Explain the procedure for drawing three dimensional scenes. (7M)
5. a) Compare and contrast between flat and smooth shading models with necessary examples. (7M)
- b) Explain the implementation of a two-pass object-precision shadow algorithm. (7M)
6. a) Discuss the classification of Fractals. (7M)
- b) Explain about Peano curves. (7M)
7. a) Explain various Boolean operations on compounded objects. (7M)
- b) Discuss the intersecting rays with a Cube or any convex polyhedron. (7M)