II B. Tech I Semester Supplementary Examinations, May - 2019
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 the transformation matrix for rotation about origin. (3M)

    b) What are Bernstein polynomials? (2M)

    c) Describe the YIQ color model. (3M)

    d) Define flat shading. (2M)

    e) What are self-affine fractals? (2M)

    f) What is Ray Casting. (2M)

PART –B

2. a) Devise a parallel method for implementing the line-width function. (7M)

    b) Justify that the Sutherland - Hodgeman algorithm is not suitable for clipping when the clipping polygon is a concave window. (7M)

3. a) Explain the steps involved in transformation form world to viewing coordinates in 3-dimensional domain. (7M)

    b) Write a procedure to obtain different parallel-projection views of a polyhedron by first applying a specified rotation. (7M)

4. a) Discuss about the luminosity function of three primary colors. (7M)

    b) Explain the procedure to generate the in-betweens for the key frames. (7M)

5. a) Discuss how the Mach-band effects are eliminated in Phong shading. (7M)

    b) Write the characteristics of the following illumination parameters. (7M)
    i) Diffuse refection
    ii)Specular reflection and
    ii). Refraction.

6. a) What is Julia set? Explain the role of these sets in computer graphics. (7M)

    b) Explain the geometric construction of statistically self-similar fractals. (7M)

7. a) Discuss the intersecting rays with a square. (7M)

    b) Write a routine to implement texture mapping for polyhedrons. (7M)

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