II B. Tech I Semester Supplementary Examinations, March - 2021
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 are the basic transformations used in viewing transformation? (3M)

    b) Classify the projections. (2M)

    c) What is an animation sequence? (2M)

    d) List merits of shading models. (2M)

    e) What is fractal dimension. (2M)

    f) Where does the ray $r(t)$=(4,1,3) + (-3,-5,-3)t hit the generic plane? (3M)

PART –B

2. a) Define and implement a function for setting the width of displayed ellipses. (7M)

    b) Explain how three Categories of lines are processed using Cohen-Sutherland line clipping algorithm. (7M)

3. a) List and describe the polygon tables representation for polygon surfaces of a 3-D object. (7M)

    b) Write a routine to display a cubic Bezier curve using a subdivision method. (7M)

4. a) Write a program that will produce a set of colors that are linearly interpolated between any two specified positions in HSV space. (7M)

    b) Explain Graphics programming using OPENGL. (7M)

5. a) Discuss the procedural texturing methods for adding surface texture. (7M)

    b) Explain about non-refractive transparency modeling. (7M)

6. a) Explain how an image is created by iterated functions. (7M)

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

7. a) Illustrate the simple method of adding surface detail with polygons. (7M)

    b) Write an algorithm to implement the basic ray tracing for a scene containing a single sphere covering over a checkerboard ground square. (7M)