

**B.C.A. (H) 4<sup>th</sup> Semester Examination, 2022**  
**Subject: Computer Application**  
**Course Title: Computer Graphics**  
**Course Code: BCA- 405**

**Time: 4 Hours**

**F.M: 80**

**Answer question no 1 and any four from the rest.**

**16x5=80**

**1. Answer any eight *questions*:**

**8 X 2 = 16**

- a) What is computer graphics?
- b) What is a pixel?
- c) What is refresh rate?
- d) What is colour look-up table?
- e) What is aspect ratio?
- f) What is rasterization?
- g) What is scan conversion?
- h) What is translation vector?
- i) What is frame buffer?
- j) What is bitmap?
- k) What is 4-way connectivity in circle drawing algorithms?
- l) What is clipping?

**Answer any Four out of the next Six Questions (from Q2 to Q7) : 4 X 16 = 64**

2.

- a) Illustrate some applications of Computer Graphics. (8)
- b) Describe horizontal retrace and vertical retrace. (8)

3.

- a) Write the DDA Line Drawing Algorithm. (8)
- b) Write the Midpoint Circle Drawing Algorithm. (8)

4.

- a) Describe translation transformation operation and write down the translation transformation matrix. (8)
- b) Write the Bresenham's Line Drawing Algorithm. (8)

5.

- a) Write the Bresenham's Circle Drawing Algorithm. (8)
- b) Write the Midpoint Ellipse Drawing Algorithm. (8)

6.

- a) Describe GKS and PHIGS. (8)
- b) Describe the Cohen-Sutherland Line Clipping Algorithm. (8)

7.

- a) Describe Scaling transformation operation and write down the scaling transformation matrix. (8)
- b) Describe Computer Aided Design (CAD). (8)