3. Attempt any **Two** of the following questions: **6 x 2 = 12**

(a) Explain the term homogeneous coordinates. Why is it needed? Give the homogeneous coordinates for translation, rotation and scaling.

(b) Derive the window to viewport coordinate transformation and elaborate.

(c) What is composite transformation matrix? Explain it with suitable equations for translation, scaling and rotation,

4. Attempt any **Two** of the following questions: **6 x 2 = 12**

(a) Discuss the basic requirements for designing curves and surfaces. What are quadratic surfaces?

(b) Write in detail on constructive solid geometry (CSG) method. How CSG operations are implemented using ray-casting methods?

(c) Discuss how polygon surfaces can be used to represent three-dimensional objects.

5. Attempt any **Two** of the following questions: **6 x 2 = 12**

(a) What are the basic elements of a multimedia system?

(b) Discuss different types of multimedia software used for various purposes.

(c) What are the steps involved in the design of animation sequence? Explain.

Roll No. | | | | | | | | | | |

B.C.A.

FIFTH SEMESTER EXAMINATION, 2019-20

COMPUTER GRAPHICS AND MULTIMEDIA APPLICATION

Time : **3 Hours** Max. Marks : **60**

Note : (i) Attempt **ALL** questions.
(ii) Choices are given in each question set.

1. Attempt any **Four** of the following questions: **3 x 4 = 12**

(a) Explain interactive and non-interactive computer Graphics.

(b) Consider the line from (0,0) to (4,6). Use the simple DDA algorithm to rasterize this line.

(c) List some standard input and output device hardware used by graphics systems.

(d) Give the advantages of Bresenham's line algorithm.

(e) Define an ellipse. Discuss its two properties.

(f) List and explain the applications of computer graphics.

2. Attempt any **Four** of the following questions: **3 x 4 = 12**

(a) What is meant by the resolution of video display unit?

(b) Explain the architecture of a simple raster graphics system.

(c) Explain the refresh operation of the video controller.

(d) Give some merits and demerits of raster scan CRT.

(e) Explain Cohen-Southerland Algorithm.

(f) Explain the mid-point subdivision algorithm for line clipping.