B.E / B.Tech (FT) END SEMESTER EXAMINATIONS – APRIL / MAY 2019

INFORMATION TECHNOLOGY

V Semester

IT8503 GRAPHICS AND MULTIMEDIA
(Regulation .....2012.....)

Time: 3 Hours | Answer ALL Questions | Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. Rasterize a line AB with coordinates (4,4) to (7,6) using Bresenhams line drawing algorithm.
2. Where is Rubber band technique used? What is its advantage?
3. Write down the condition for point clipping in graphics.
4. Which function is used in OpenGL for Line clipping?
5. How will you represent a cube in graphics?
6. List the characteristics of B Splines.
7. List the advantages and disadvantages of Run length encoding technique.
8. What is the structure of an R tree? Give an example multimedia component represented using R tree.
9. What are the components of a virtual reality system.
10. Write down the different types of authoring system with an example system for each.

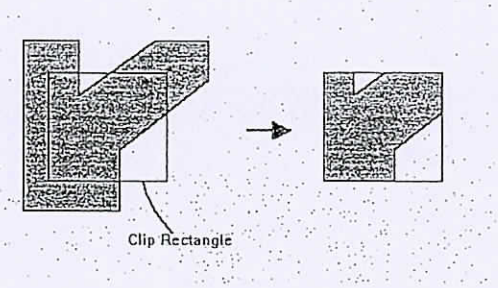
Part – B (5 x 16 = 80 marks)
(Question No.11 is Compulsory)

11. (i) Digitize a circle with centre point C(6,6) with radius 5 units using mid point circle drawing algorithm.(8)
(ii) Discuss on any four graphical input devices in detail.(8)

12. a) (i) Derive the general Window to Viewport transformation. (8)
(ii) Apply a rotation of 30 degrees and a scaling factor of (2,2) on a triangle ABC with coordinates (5,5) (8,5) (7,8). Calculate the new coordinates of the triangle. (8)

(OR)

b) (i) Write an OPenGL code snippet to draw a Hexagon and fill it up with solid colour. (8)
(ii) Use Cohen Sutherland polygon clipping algorithm to clip the polygon shown in the figure below against the rectangular window to obtain the result as shown in the figure.(8)



13. a) (i) Compare and contrast Parallel and Perspective projections in detail..(8)
(ii) How will you identify the visible faces of a three dimensional object? Explain with an algorithm.(8)

(OR)

b) (i) Discuss on the different types of Visualization in detail with an example for each type.(8)
(ii) Compare and Contrast RGB and CMY colour models in detail.(8)

14. a) How is Video encoding performed using MPEG compression technique? Explain in detail. (16)

(OR)

b) Discuss on the characteristics, representation formats and types of multimedia elements in detail .(16)

15. a) Explain the process of creating a fully fledged multimedia application in detail with an example application. (16)

(OR)

b) How are digital library repositories created? Explain the process of content based searching in the digital repository using images and videos in detail(16)