2020

B.C.A

[HONOURS]

Paper : BCA-303

Full Marks : 80 Time : 4 Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer **Q. No. 1** and any **four** from the rest.

1. Answer any **eight** questions: 2×8=16

   a) What is affine transformation?

   b) Define window.

   c) What is look up table?

   d) Define vector analysis.

   e) Write full form of MIDI, JPEG, AVI, CRT.

   f) What is bit map?

   g) What is animation?

   h) Define frame buffer.

   i) What is need for homogeneous co-ordinate system?

   j) Mention side effects that are caused by scan conversion.

   k) What is redundancy in Image?

   l) What is additive color model?

2. a) What is viewport?

   b) Derive the points for a rectangle whose vertices are A(–2,–2), B(2,–2), C(2,2), D(–2,2) after appling scaling to double the size of the rectangle.

   c) What are the advantages of multimedia?

   d) Write the differences between Raster scan and Random scan display. 2+6+4+4=16

3. a) Write different characteristics of multimedia.

   b) What is audio compression?

   c) What is morphing?

   d) Discuss about Teleconferencing.

   e) Define twinning. 6+2+2+4+2=16

4. a) Discuss about beam penetration method and shadow mask method in detail.

   b) Write down the function code for boundary till algorithm.

c) Write the shearing matrix where shearing factor with respect to x axis is 2 and shearing factor with respect to y axis is 3.

d) Draw a straight line from (2,6) to (7,12) using Brasenhams line drawing algorithm.

6+4+2+4=16

5. a) Prove that two successive scaling are multiplicative.

b) What is hypertext?

c) Discuss about any one line clipping algorithm with example. 4+2+10=16

6. a) Discuss about 2D rotation.

b) Derive transformation matrix for any object which is reflected with respect to Y=10 straight line.

c) Derive window to viewport transformation.

4+8+4=16

7. Write short notes on any **four**: 4×4=16

a) 8 connected and 4 connected.

b) flood fill.

c) 3D Projection.

d) Multimedia Hardware.

e) CCD.

f) Bezier curve.

————————