Professional Course Examination, January, 2021
BACHELOR OF COMPUTER APPLICATIONS
(5th Semester)
Course : BCA–502
(Computer Graphics and Multimedia)(Pre-Revised)
(PART : A—OBJECTIVE)
(*Marks* : 25)

SECTION—A
(*Marks* : 15)

1. Tick the correct answer in the brackets provided : (1×10=10)

a) The number of pixels stored in the frame buffer of a graphics system is known as
   i) Resolution.
   ii) Depth
   iii) Pixel
   iv) Buffer

b) Heat supplied to the cathode by directing a current through a coil of wire is called
   i) Electron gun
   ii) Electron beam
   iii) Filament. .
   iv) Anode and cathode

c) It alters the size of an object
   i) Translation
   ii) Rotation
   iii) Co-ordinate
   iv) Scaling.

d) A text clipping method which discard the whole string when few part of the string are outside the clipping window
   i) All or none string clipping.
   ii) All or none character clipping.
   ii) Text clipping
   iv) Character Clipping

e) When a line has just one end it is called a _____
   i) Segment
   ii) Angle
   iii) Ray.
   iv) None of the above

f) A plane is ___
   i)One Direction
   ii) Two Direction.
   iii) Three Direction
   iv) Multi Direction

g) In a _____ curve changing any control point will affect the shape of entire curve.
   i) Bezier .
   ii) B-Spline
   iii) Spline
   iv)Transcendental Curve

h) Spheres and cones are examples of
   i) Quadrics.
   ii) Superquadrics
   iii) Bezier Curves
   iv) B-Spline Curves

i) JPEG is a _____- format
   i) lossy
   ii) lossless

iii) Quality progressive   iv) Component progressive

j) This visual effect technique involves moving graphic elements such as text or logos, mostly using software such as After Effects.

    i) 2D animation   ii) 3D Animation
    iii) Motion Graphics   iv)Stop Motion

II. Indicate whether the following statements are True(T) or False(F):   **(1x5=5)**

(a) Random scan is also called vector scan.   (T/F)
(b) Scaling of a polygon is done by computing (x,y) of end points.   (T/F)
(c) The formula of line drawing algorithym is $y=mx+b$.   (T/F)
(d) Beziers curves is a subset of B-spline curves.   (T/F)
(e) MIDI is a sound compression technique.   (T/F)

SECTION—B
(*Marks* : 10)

Answer the following questions: **(2×5=10)**

1. a) What is a Plasma Panel Display
            OR
   b) What are Resistive Touch Screens?

2. a)Write a short note 3D Perspective projection.
            OR
   b) Write short notes on Sutherland Hodgeman Algorithms

3. a) What is x-intersect and y-intersect of a straight line in a 2D plane?
            OR
   b) Write short notes on mid-point circle drawing algorithm

4. a) What is a Spline curve?
            OR
   b) Explain the difference between Ellipse and Circle.

5. a)What do you mean lossy compression of image?
            OR
   b) What do you mean lossless compression of image?

(PART : B—DESCRIPTIVE)
(Marks: 50)

The figures in the margin indicate full marks for the questions

1. (a) What do you mean by refresh CRT? Explain the working principle of Raster Scan and Random Scan Monitors. (6)

(b) Explain the working principle of LCD Panels. (4)

OR

(c) What is Computer Graphics? Write down the different types of Computer Graphics (6)

(d) Explain the working principle of Plasma Panels (4)

2. (a) What do you mean by 2D transformation? Explain the different types of 2D transformation with suitable diagram. (6)

(b) Explain the different Clipping operations. (4)

OR

(c) A triangular object located in the 1st quadrant of a 2D plane has an (x,y) coordinate point of (2,2) (3,4) and(4,2). Using Homogenous Coordinate System, calculate and plot the mirror reflected location of this object in the 4th quadrant. (6)

(d) Explain Cohen-Sutherland line clipping algorithm. (4)

3.(a) Explain Bresenham's Line Drawing algorithm with a suitable example (6)

(b) What is a frame buffer ? Explain the important role played by frame buffer in computer graphics (4)

OR

(c) Write notes on the following : (5+5=10)

(i) Ellipse generating algorithm
(ii) Circle generating algorithm

4.(a) What is quadric surface? Explain with a diagram, the parametric equation of an ellipse. (6)

(b) What is B-spline curve? Write down the properties of B-spline curve. (4)

OR

(c) Write notes on the following: (5+5=10)
(i) Superellipse
(ii) Beziers curve

5. (a) What is multimedia? Explain how multimedia played an important role in the field of Education (6)

(b) What is Morphing? (4)

OR

(c) What do you mean by MIDI? Write down the different classification of MIDI message. (6)

(d) Write the difference between Analog and Digital audio (4)

*** V/BCA/503***