

(Please write your Exam Roll No.)

Exam Roll No.

ANNUAL EXAMINATION

SIXTH SEMESTER [BCA] MAY- JUNE 2015

Paper Code: BCA-306

Subject: Computer graphics and multimedia applications

Time: 3 Hours

Maximum Marks: 75

Note: Attempt any five questions including Q no. 1 which is compulsory.
Select one question from each unit.

- Q1 Answer **any ten** the following question briefly:- (10x2.5=25)
- (a) Advantage of computer graphics
 - (b) Polygon Meshes
 - (c) Need of homogenous coordinate system
 - (d) Matrix representation along X-axis and Y-axis
 - (e) DDA algorithm for $m < 1$
 - (f) Image processing as picture analysis
 - (g) 3D rotation matrices in X,Y and Z direction
 - (h) Primitive Instancing
 - (i) Regularized Boolean set operators
 - (j) Uniform periodic B-Spline
 - (k) Application of multimedia
 - (l) Clipping

UNIT-I

- Q2 (a) Describe Bresnham's Algorithm to draw a circle. Draw a circle whose centre is (0,0) and radius is 10 by using algorithm. (6.5)
(b) Differentiate between raster and random scan system. (6)
- Q3 (a) Explain the working of CRT with the help of diagram. Compare it with DVST (6.5)
(b) Discuss Sutherland-Cohen algorithm for line clipping. Clip a line $P_1(70,20)$ to $P_2(100,10)$ against a window whose lower left hand corner is (50,10) and upper hand corner is (80,40). (6)

UNIT-II

- Q4 (a) Reflect the triangle ABC about the line $3x-4y+8=0$. The position vector of the coordinates ABC is given as $A(4,1)$, $B(5,2)$, $C(4,3)$. (6.5)
(b) What is the difference between windows and viewport. Give the matrix for window to viewport transformation. (6)
- Q5 (a) Find the normalization transformation N, which uses the rectangle $A(1,1)$, $B(5,3)$, $C(4,5)$ and $D(0,3)$ as a window onto a normalized device screen as a viewport where x-extent is from 0 to 1 and y-extent from 0 to 1. (6.5)
(b) Explain Cyrusbeck algorithm for line clipping. (6)

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UNIT-III

- Q6 (a) Explain any method for solid modeling. (6.5)
(b) Generate an expression for the blending function of a cubic Bezier curve. Plot a rough Sketch of the blending function generated. Find the equation of Bezier curve which passes through (0,0) and (-4,2) and controlled through (14,10) and (4,0). (6)
- Q7 (a) Compare spatial partitioning method with Constructive solid Geometry. (6)
(b) What is B-Spline curves. Give all the properties of B-Spline Curves. Compare Uniform and Non-Uniform B-Splines. (6.5)

UNIT-IV

- Q8 (a) Describe all the authoring tools of multimedia. (6)
(b) Explain the construction of CD-ROM and list its various formats. (6.5)
- Q9 (a) Discuss the basic stages in developing of a multimedia project. (6)
(b) Explain the skills set required for multimedia team. (6.5)

177
300

477
50
17

544

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