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Roll No.

BCA-IV Sem.

18016

B. C. A. Examination, May 2016

Computer Graphics and Multimedia Application

[BCA-401(New)]

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Questions)

Attempt all the *five* questions. Each question carries 3 marks. Very short answer is required not exceeding 75 words. $3 \times 5 = 15$

1. What is Computer Graphics ? Explain the different applications of Computer Graphics in several fields.

(2)

2. What is the difference between Raster image and Vector image ?
3. What is Clipping ? Name the different types of clipping.
4. What is Bezier Curve ? Write the two characteristics of Bezier Curve.
5. What is Animation ? Name different types of animation.

Section-B

(Short Answer Questions)

Attempt any *two* questions out of the following three questions. Each question carries $7\frac{1}{2}$ marks. Short answer is required not exceeding 200 words. $7\frac{1}{2} \times 2 = 15$

6. What is Transformation ? Explain the basic 2-D transformation with example.
7. For 10×10 frame buffer, interpret the Bresenham algorithm to find which pixels are turned on for the line segment (1, 2) and (7, 6).

18016

8. Explain the Sutherland-Hodgeman clipping algorithm for polygon clipping and also implement it by considering suitable example.

Section-C

(Detailed Answer Questions)

Attempt any *three* questions out of the following five questions. Each question carries 15 marks. Answer is required in detail. $15 \times 3 = 45$

9. What is Cathode Ray Tube (CRT) ? Explain the functioning of CRT with proper diagram.
10. Write the steps to rotate an object about an arbitrary point (h, k) . Explain each step with proper diagram.
11. What is Cubic Bezier Curve ? A cubic Bezier curve is defined over the control points $(1, 1)$, $(2, 3)$, $(4, 4)$ and $(6, 1)$. Calculate the parametric midpoints of this curve and show that its gradient dy/dx is $1/7$.

12. What is Multimedia ? Explain the different categories of multimedia. Also explain the different applications of multimedia.
13. Explain the different 3-D animation software. Also explain the different hardware required for computer animation.