D (Printed Pages 4)

(20525) Roll No. .

BCA -IV Sem.

18016

B.C.A. Examination, May-2025

COMPUTER GRAPHICS AND MULTIMEDIA APPLICATION

(BCA-401)

Time : Three Hours] *[Maximum Marks : 75*

Note : Attempt questions from **all** sections as per instructions.

Section-A

(Very Short Answer Type Questions)

Note : Attempt all **five** questions. Each question carries **3** marks. Very short answer is required not exceeding **75** words. 5×3=15

1. What is Interactive Computer Graphics?
2. Write something about Rotation in 2D.

P.T.O.

3. What are the Video display devices?
4. What do you mean by Animation?
5. Explore three essential Hardware components used for Computer Graphics.

Section-B

(Short Answer Type Questions)

Note : Attempt any **two** questions out of the following three questions. Each question carries **7½** marks. Short answer is required not exceeding **200** words. 2×7½=15

6. Consider a triangle having vertices at A(0,0), B(5,1) and C(3,4). Scale this triangle using scale factors Sx=2 and Sy=1 about:

   (a) the origin

   (b) the reference point (2,3)

7. Discuss the working principle of CRT with a neat diagram.

8. Discuss the DDA line Algorithm and apply it for the line AB where coordinates for A and B are (2,3) and (8,7) respectively.

Section-C

(Long Answer Type Questions)

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

9. What are the applications of Computer Graphics? Discuss in detail.

10. What is Polygon? Explain the polygon clipping and define the Sutherland Hodgeman Algorithm for Polygon clipping.

11. What do you mean by Projection? Show the difference between Parallel and Perspective Projection.

12. Write a detailed explanation of Translation, Scaling and Rotation in 2D Transformation with neat diagrams.

13. Explain Bresenham's Circle Drawing Algorithms. Draw the circle having radius 6 using this algorithm.

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(20524) (Printed Pages 3)

BCA - IV Sem. Roll No.

18016

B.C.A. Examination, May-2024

Computer Graphics and Multimedia Application

[BCA-401]

Time : Three Hours] ***[Maximum Marks : 75***

Note : Attempt **all** the Sections as per instructions.

Section-A

Note : Attempt **all** questions. 3×5=15

1. Give the applications of Multimedia? 3
2. Explain the brief notes on pivot point rotation of an object. 3
3. What is output primitive? 3
4. What is aspect ratio? 3

P.T.O.

5. What do you mean by scan conversion. 3

Section-B

Note : Attempt any **two** questions 7½×2=15

6. Show that two successive reflections about the coordinates axel is equivalent to a single rotation about the coordinate origin. 7½
7. Compare between window part and view port. 7½
8. Explain Ellipse generating algorithm? 7½

Section-C

Note : Attempt any **three** questions. 15×3=45

9. Write about Cohen-Sutherland line clipping algorithm with an example. 15

10. Explain Computer Animation. What are different types of functions available for computer animation. Also write in details types of animation. 15

11. What do you mean by multimedia? What are different types of hardware and software requirement to make good multimedia. Explain in details. 15

12. Translate the Polygon with co-ordinates A(2, 5), B(7, 10) and C(10, 2) by 3 units in x direction and u units of y direction. 15

13. Write short notes on the following: 15

    (a) Cyrus-Beck Algorithm

    (b) Bezier Curve

    (c) Boundary fill algorithm

A

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BCA-IV Sem.

Printed Pages : 3

Roll No. .....

18016

B.C.A. Examination, June-2023

COMPUTER GRAPHICS AND MULTIMEDIA APPLICATION

[BCA-401]

Time : 3 Hours] *[Maximum Marks : 75*

Note : Attempt questions from **all** Sections as per instructions.

Section–A

(Very Short Answer Questions)

Note : Attempt **all** the five questions. Each question carries 3 marks. Very short answer is required not exceeding 75 words.

1. Define convex and concave polygon. 3

2. List any four areas of applications of computer graphics. 3

3. State the concept of vanishing point. 3

4. Define refresh/frame buffer. 3

5. What are the video display devices ? 3

Section–B

(Short Answer Questions)

Note : Attempt any **two** questions. 2×7½=15

6. Digitize a line from (10,12) to (15, 15) on a raster screen using Bresenhams straight line Algorithm. What are the various line drawing algorithms ? 7½

7. Calculate the pixel location approximating the first octant of a circle having centre at (4, 5) and radius 4 units using Bresenham's algorithm. 7½

8. Explain the following composite tranformations (i) Translation (ii) Rotation. 7½

Section–C

(Detailed Answer Questions)

Note : Attempt any **three** questions. 3×15=45

9. What is multimedia ? Explain the objects involved in Multimedia system and describe various applications. https://www.ccsustudy.com 15

10. Explain the following : 15
    (a) Cubic curves
    (b) Quadric surface
    (c) Computer Animation

11. Find a transformation of triangle A (1, 0), B (0, 1), C (1, 1) by.

(a) Rotating 45° about the origin and then translating one unit in X and Y direction.

(b) Translating one unit in X and Y direction and then rotating 45° about the origin. 15

12. What is transformation ? What are the steps involved in 3D transformation. Explain with examples. 15

13. Write about Cohen-Sutherland line clipping algorithm with an example. 15

A (Printed Pages 4)

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BCA - IV Sem.

18016

B.C.A. Examination, June-2022

COMPUTER GRAPHICS AND MULTIMEDIA APPLICATION

[BCA-401]

Time : Three Hours] *[Maximum Marks : 75*

Note : Attempt all the Sections as per instructions.

Section-A

(Very Short Answer Type Questions)

Note : Attempt all the five questions. Each questions carries 3 marks. Very short answer is required not exceeding 75 words.

P.T.O.

1. What is the draw back of DDA line generation algorithm and advantage of Bresenham's line algorithm. 3
2. What is Computer Graphics? Indicate five practical applications of Computer Graphics. 3
3. What is viewing transformation? What is difference between window and view port? 3
4. What is digital video? Explain the use of digital video in developing multimedia applications. 3
5. What are the animation file formats? List the animation software's 3

Section-B

(Short Answer Types Questions)

Note : Attempt any two questions.

$2 \times 7\frac{1}{2} = 15$

6. It is desired to draw a line starting at A (3,6) and ending at B(6,2) on a graphics

monitor use generalized Bresenham's algorithm to determine the pixels that world be put ON. 7½

7. Show that this is same as coordination of matrix for 45 degree clockwise rotation followed by reflection about x axis and finally by counter clockwise rotations by 45 degree about origin. 7½

8. Explain Multimedia with suitable example. State the importance of animation in multimedia.

Section-C

(Detailed Answer Questions)

Note : Attempt any **three** questions:

3×15=45

9. Define popular video recording formats and discuss their strength and weakness for use in multimedia with its benefits and drawbacks of each type? 15

10. Explain MIDI versus Digital audio and also write the advantages and disadvantages of MIDI over digital audio. 15

11. Explain principles of animation and how we can perform animation by computer. 15

12. Write down and explain the midpoint circle drawing algorithm. Assume 10cm as the radius and co-ordinate origin as the center of the circle. 15

13. (i) Discuss on the various input techniques in detail. 15

(ii) Show a trans formation matrix for rotating an object about a specified pivot point.

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Total Questions : 13] [Printed Pages : 3

18016

B.C.A. IVth Semester Examination, May-2019

COMPUTER GRAPHICS AND MULTIMEDIA APPLICATION

[BCA-401(New)]

Time : 3 Hrs.] *[M.M. : 75*

Note :- Attempt questions from all Sections as per instructions.

Section–A

(Very Short Answer Type Questions)

Note :- Attempt all the *five* questions. Each question carries 3 marks. Very short answer is required not exceeding **75** words.

1. What is Computer Graphics ?
2. What is Video Controller ? Explain.

https://www.ccsustudy.com

3. What is Pixel and Frame Buffer ?
4. What is Flicking ?
5. What is Multimedia ?

Section–B

(Short Answer Type Questions)

Note :- Attempt any *two* questions out of the following three questions. Each question carries 7½ marks. Short answer is required not exceeding **200** words.

6. Explain Raster and Random scan display system.
7. Explain the basic rules of animation with example.
8. Explain the uses of computer graphics.

Section–C

(Long Answer Type Questions)

Note :- Attempt any *three* questions out of the following five questions. Each question carries 15 marks. (Not exceeding **400** words).

9. Write down and explain the mid-point circle drawing algorithm. Assume 10 cm as the radius and co-ordinate origin as the centre of the circle.

https://www.ccsustudy.com

https://www.ccsustudy.com

10. What is the basic concept of line drawing ? Explain Bresenham's line Algorithm to draw a line between any *two* end-points.

11. Find 3 × 3 homogeneous transformation matrix to transform square ABCD into another square A'B'C'D'. Side of the original square = 2, coordinate of point A(20, 10). Draw a final transformation graph paper.

12. Define and compare the Bezier curve and B-spline curve.

13. Write short notes on any *three* of the following :

    (a) CRT

    (b) Cohen-Sutherland line clipping algorithm

    (c) Window and view port

    (d) Polygon

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BCA-IV Sem.

18016

B. C. A. Examination, May 2018

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. 3×5=15

1. What is GUI ? Explain.

2. What is Multimedia ?

3. Write the uses of Computer Graphics ?

4. Define 'Shear' transformation.

5. What is Refresh Rate ?

Section-B

(Short Answer Questions)

Attempt any *two* questions out of the following three questions. Each question carries 7½ marks. Short answer is required not exceeding 200 words. 7½×2=15

6. Describe about the most commonly used colour models used in Computer Graphics.

7. Describe any method for visible surface detection.

8. What is bit plane ? How bit planes are used to get different colours ?

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. 15×3=45

9. Generate an origin centered circle with radius-2 with eight unique points on the circle.

10. Rotate a triangle [(4, 6), (2, 4), (6, 2)] about the vertex (4, 6) by 180° clockwise and find the new vertices.

11. Differentiate between the terms multimedia system and multimedia application, with example.

12. A triangle ABC is A (0, 0), B(4, 0) and C(0, 4). Find the shearing transformation with $a = 2$ and $b = 3$.

13. Write short notes on any three of the following :

(a) Projection

(b) Colour frame buffer

(c) 2-buffer method

(d) DDA.

N **(Printed Pages 4)**

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BCA-IV Sem.

18016

B.C.A. Examination, May 2017

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)

Note : Attempt **all** the **five** questions. Each question carries **3** marks. Very short answer is required not exceeding 75 words.

3×5=15

P.T.O.

1. What is Computer Graphics? Explain the use of Computer Graphics. 3
2. What is frame buffer memory? 3
3. Write the properties of Bezier Curve. 3
4. What are the main categories of Animation tools.? 3
5. Explain the characteristics of a good line. 3

Section-B

(Short Answer Questions)

Note : Attempt any **two** questions out of the following three questions. Each question carries **7½** marks. Short answer is required not exceeding 200 words.

7½×2=15

6. What is clipping? Explain the Mid-Point sub division Algorithm for line clipping.
7. Explain three basic Rules of Animation with example.

8. Scale the square ABCD[A(0,0). B(3,0) C(3,3), & D(0,3)], three units in x-direction & Three units in y-direction with respect to origin.

Section-C

(Detailed Answer Questions)

Note : Attempt any **three** questions out of the following **five** questions. Each Question carries 15 marks. Answer is required in detail. 15×3=45

9. What is the use of Animation? Also explain different types of Animation, and also explain the different applications of multimedia.

10. Explain the following terms-translation, Scaling & Rotation about Origin & Reflection about X-axis.

11. What do you mean by projection? Differentiate between parallel projection and perspective projection.

12. Perform a 45^0 Rotation of triangle ABCD when A(0,0), B(1,1), & C(5,2), about origin.

13. What is polygon? Also explain the polygon clipping. and define the Sutherland Hodgeman Algorithm for polygon clipping.

V

(20516)

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. 3×5=15

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

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 7½ marks. Short answer is required not exceeding 200 words. 7½×2=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).

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. 15×3=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.