

11. What do you mean by projection? Differentiate between parallel projection and perspective projection.
12. Perform a  $45^\circ$  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.

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Roll No. ....

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.

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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.

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

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

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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.

$$15 \times 3 = 45$$

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.

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

- (a) Projection
- (b) Colour frame buffer
- (c) 2-buffer method
- (d) DDA.

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BCA-IV Sem.

Roll No. ....

**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.

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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  $7\frac{1}{2}$  marks. Short answer is required not exceeding 200 words.  $7\frac{1}{2} \times 2 = 15$

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 ?

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#### 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. 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  $180^\circ$  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  $b = 3$ .

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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.

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Turn Over

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  $7\frac{1}{2}$  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.

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  $3 \times 3$  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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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.

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BCA-IV Sem.

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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.

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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  $10 \times 10$  frame buffer, interpret the Bresenham algorithm to find which pixels are turned on for the line segment (1, 2) and (7, 6).

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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  $1/7$ .

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