**GANDHI INSTITUTE OF ENGINEERING & TECHNOLOGY UNIVERSITY, GUNUPUR – 765022**

B.C.A (Third Semester)

**CYCLE TEST – II**

**BCA23303: Computer Graphics**

Time: 75 Minutes Maximum: 30 Marks

**(The figures in the right-hand margin indicate marks.)**

**PART – A (2 x 5 = 10 Marks)**

|  |  |  |  |
| --- | --- | --- | --- |
| Q.1. Answer ALL questions | | CO # | Blooms Level |
| a. | Explain the cases of Cohen-Sutherland line clipping. | 3 | 2 |
| b. | Write the algorithm for the Mid-Point Circle Drawing method | 3 | 2 |
| c. | What is 2D Transformation? | 4 | 1 |
| d. | Write the matrix representation for 2D Scaling. | 4 | 1 |
| e. | What is line clipping and explain the segments of line? | 3 | 1 |

**PART – B (10 x 2 = 20 Marks)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Answer ALL Questions** | | Marks | CO# | Blooms Level |
| 2.a. | Write a short note on  1. Clipping Algorithm.  2. Scan Conversion of Circle | 6 | 3 | 2 |
| b. | Clip the flowing polygon by using Sutherland Hodgeman Polygon Clipping algorithm. | 4 | 3 | 1 |
| **(OR)** | | | | |
| c. | Find the points on the Circumference of circle where centre is at Origin having a radius of 25 using Mid-Point’s Algorithm. | 10 | 3 | 3 |
| 3.a. | A(0,0),B(0,1),C(1,1),D(1,0) are the vertices of unit square ,find out sheared object with shearing factor 3 in X-Direction ,Y-direction. | 5 | 4 | 3 |
| b. | What is 2D Reflection? Explain with an example. | 5 | 4 | 2 |

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**PART – B (10 x 2 = 20 Marks)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Answer ALL Questions** | | Marks | CO# | Blooms Level |
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| 3.a. | A(0,0),B(0,1),C(1,1),D(1,0) are the vertices of unit square ,find out sheared object with shearing factor 3 in X-Direction ,Y-direction. | 5 | 4 | 3 |
| b. | What is 2D Reflection? Explain with an example. | 5 | 4 | 2 |
| **(OR)** | | | | |
| c. | Make the size of the object double controlled by 4 point A (1,1),B (1,5), C (3,5),  D (3,1) S.F=2 by using 2D-scaling. | 5 | 4 | 2 |
| d. | A triangle has vertices at points A (2, 3), B (4,5) and C(6,2). Apply a translation defined by vector T1 (3, −2) to each of the vertices of the triangle. After the first translation, apply a second translation defined by vector T2 (−4, 3) to the new coordinates of each vertex. What are the final coordinates of points A, B, and C after both translations? | 5 | 4 | 3 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **(OR)** | | | | |
| c. | Make the size of the object double controlled by 4 point A (1,1),B (1,5), C (3,5),  D (3,1) S.F=2 by using 2D-scaling. | 5 | 4 | 2 |
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