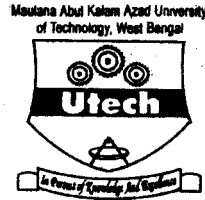


CS/BCA/ODD SEM/SEM-3/BCA-303/2016-17



**MAULANA ABUL KALAM AZAD UNIVERSITY OF
TECHNOLOGY, WEST BENGAL**
Paper Code : BCA-303
GRAPHICS AND INTERNET

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own
words as far as practicable.*

GROUP - A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following :

$10 \times 1 = 10$

- i) Refreshing on raster scan displays is carried out at the rate of
- a) 60 to 80 frames per sec
 - b) 40 to 60 frames per sec
 - c) 30 to 60 frames per sec
 - d) None of these.

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- ii) The maximum number of points that can be displayed without overlap on a CRT is referred to as
- a) Resolution
 - b) Persistence
 - c) Attenuation
 - d) None of these.
- iii) Dragging in computer graphics can be achieved through which of the following transformations ?
- a) Translation
 - b) Rotation
 - c) Scaling
 - d) Mirror reflection.
- iv) GIF supports
- a) 256 colors
 - b) 512 colors
 - c) 1024 colors
 - d) 16 million colors.
- v) How many matrices are required to rotate an object about a point (x, y) ?
- a) 2
 - b) 3
 - c) 4
 - d) 5.
- vi) Which of the following techniques is used in Midpoint subdivision algorithm ?
- a) Binary Search
 - b) Bubble sort
 - c) Linear search
 - d) Sequential search.

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GROUP - B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. Derive the transformation matrices for 2D reflection about X-axis and Y-axis.
3. Name the tag used to insert horizontal rule in a web page. Describe its attributes.
4. Explain what do you understand by 8 point symmetry of a circle. Write a Function called Flood Fill for filling closed area.
5. How many layers are there in TCP/IP model ? Describe connection oriented and connectionless services provided by the transport layer. $1 + 4$
6. Derive the condition for smooth joining of two Bezier curve segments of degree three.

GROUP - C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. a) Write down the Cohen-Sutherland subdivision line clipping algorithm (A short discussion about the binary region codes assigned to line endpoints must precede the algorithm).

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- b) What are the advantages/disadvantages (if any) of the above algorithm ?
- c) What do you understand by Homogenous Coordinate ?
- d) Distinguish between Raster-Scan display & Random Scan display. $7 + 3 + 3 + 2$
8. a) Describe the Bresenham's Line drawing algorithm (no program is required. Only the algorithm will do)
- b) What is the difference between the raster graphics and vector graphics ?
- c) Distinguish between classless and classful addressing. $7 + 3 + 5$
9. a) How superscript and subscript are formatted in HTML document ? How can you use style sheet to define your own formatted subscript and superscript ?
- b) Describe the use of <FRAMESET> tag with example.

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- c) Write an HTML script for refreshing a topic within the webpage with example.
- d) Write down two attributes of <BODY> tag. Explain their utility with suitable example. 4 + 3 + 5 + 3
10. a) Perform a 45° rotation of a triangle A (0,0), B (1,1), C (5,2) about an arbitrary point P (- 1, - 1).
- b) Describe the Mid-Point Subdivision algorithm. 7 + 8
11. a) Find the transformation matrix for the reflection about the line $y = mx + c$.
- b) A clipping window ABCD is located as following :
- A (100,10),
- B (160,10), C (160, 40), D (100,40);
- Using Sutherland-Coherent clipping algorithm find the visible portion of the line segment P1P2
P1 (120,5), P2 (180,30). 7 + 8

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12. Write short notes on the following (any *three*) : 3 × 5

- a) DHML
 - b) Transformation between Coordinate System
 - c) CRT
 - d) Hidden Surface removal.
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