



Name :
Roll No. :
Invigilator's Signature :

CS / BCA / SEM-3 / BCA-303 / 2010-11

2010-11

GRAPHICS AND INTERNET

Time Allotted : 3 Hours

Full Marks : 70

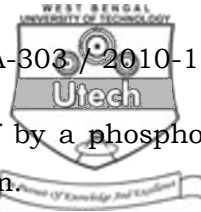
The figures in the margin indicate full marks.

*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) The path taken by the electron beam when returning to the left side of the CRT screen will be
 - a) horizontal retrace
 - b) vertical retrace
 - c) diagonal retrace
 - d) none of these.
 - ii) is a cryptographic protocol, which provide secure communications on the internet.
 - a) UDP
 - b) TCP
 - c) SSL
 - d) SMTP.
 - iii) is an extension of HTML file.
 - a) htm
 - b) html
 - c) http
 - d) both (a) and (b).



- iv) refers to the light given off by a phosphor while it is being exposed to electron beam.
- a) Persistence b) Fluorescence
c) Phosphorescence d) None of these.
- v) When the point (3, 2) is reflected in y -axis, then the coordinate of the reflected point will be
- a) (-3, 2) b) (3, -2)
c) (-3, -2) d) None of these.
- vi) is connectionless transport layer protocol in the TCP/IP protocol stack.
- a) TCP b) IP
c) UDP d) None of these.
- vii) In Cohen-Sutherland algorithm, region bit code is assigned to each end point of the line.
- a) 2 b) 3
c) 4 d) 5.
- viii) Find the class of the following IP address :
193.171.21.23
- a) CLASS A b) CLASS B
c) CLASS C d) CLASS D.
- ix) is the decision variable in Bresenham's circle drawing algorithm.
- a) $d = 2 - 3r$ b) $d = 3 - 2r$
c) $d = 4r - 5$ d) None of these.



- x) display was used to primary draw line segments.
- a) Raster scan b) Random scan
c) LCD d) None of these.

GROUP - B

(Short Answer Type Questions)

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

2. Write the general form of a scaling with respect to a fixed point P (h, k).
3. What is aspect ratio ? What do you mean by a resolution of a screen ?
4. Define the difference between classful & classless addressing system.
5. Define the difference between IPv4 and IPv6. What is address space ?
6. Find the transformation matrix for reflection of the point P (x, y) about the line $y = x$.

GROUP - C

(Long Answer Type Questions)

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

7. a) An organization is granted the block 205.16.37.39/28. The administrator wants to create 32 subnets.
 - i) Find the subnet mark
 - ii) Find the number of addresses in each subnet
 - iii) Find the first and last addresses in subnet 1
 - iv) Find the first and last addresses in subnet 32

$2 \times 4 = 8$
- b) Suppose an organization is given the block 17.12.04.0/26 which contains 64 addresses. The organization has 3 offices & needs to divide the addresses into 3 sub-blocks of 32, 16 & 16 addresses. Design the network of that building. 7



8. a) Write Cohen – Sutherland Algorithm. 6
 b) Draw the Beizer curve defined by the control points $B_0(2, 1)$, $B_1(3, 2)$, $B_3(5, 0)$, $B_4(6, 2)$. 6
 c) Define the difference between raster scan and random scan displays. 3
9. a) What is the difference between Parallel Projection and Perspective Projection ? 4
 b) Write and explain Bresenham’s algorithm for drawing a straight line. How does it remove the drawbacks of ‘DDA’ algorithm ? 6
 c) What are the vertical retrace and horizontal retrace ? 2
 d) Define condition about a point clipping. 3
10. a) Magnify the triangle with vertices A (0, 0), B (1, 1) and C (5, 2) to twice its size while keeping C (5, 2) fixed. 6
 b) Prove that the inverse of the rotation matrix is its transpose. 6
 c) Define frame buffer. 2
 d) Define the difference between pixmap and bitmap. 1
11. Write a short notes (any *three*) : $3 \times 5 = 15$
 a) Shadow masking
 b) Orthographic and oblique projection of an object
 c) SMTP
 d) DNS
 e) FTP.

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