Name :	
Roll No. :	An Annual (V Executing and Explored
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).

3164

[Turn over]

iv) refers to the light given off by a 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 <i>y</i> -axis, 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 p the TCP/IP protocol stack. a) TCP b) IP c) UDP d) None of these vii) In Cohen-Sutherland algorithm, for 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 at 193.171.21.23 a) CLASS A b) CLASS B c) CLASS B c) CLASS C d) CLASS D. ix) is the decision variable in Brecircle drawing algorithm. a) $d = 2 - 3r$ b) $d = 3 - 2r$				_		
iv)			CS / BCA / S	SEM-	3 / BCA- <u>B03</u> 2010-11 Utech	
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 <i>y</i> -axis, 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 p the TCP/IP protocol stack. a) TCP b) IP c) UDP d) None of these vii) In Cohen-Sutherland algorithm, 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 at 193.171.21.23 a) CLASS A b) CLASS B c) CLASS C d) CLASS D. ix) is the decision variable in Broc circle drawing algorithm. a) $d = 2 - 3r$ b) $d = 3 - 2r$	iv)		refers to the li	ght g	given off by a phosphor	
a) Persistence b) Fluorescence c) Phosphorescence d) None of these v) When the point (3, 2) is reflected in <i>y</i> -axis, 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 p the TCP/IP protocol stack. a) TCP b) IP c) UDP d) None of these vii) In Cohen-Sutherland algorithm,		whil	e it is being exposed to	electi	on beam	
c) Phosphorescence d) None of these v) When the point (3, 2) is reflected in y-axis, 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 p the TCP/IP protocol stack. a) TCP b) IP c) UDP d) None of these vii) In Cohen-Sutherland algorithm, 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 a 193.171.21.23 a) CLASS A b) CLASS B c) CLASS C d) CLASS D. ix) is the decision variable in Bre- circle drawing algorithm. a) $d = 2 - 3r$ b) $d = 3 - 2r$		a)	Persistence	b)	Fluorescence	
v)When the point (3, 2) is reflected in y-axis, coordinate of the reflected point will bea) $(-3, 2)$ b) $(3, -2)$ c) $(-3, -2)$ d)None of thesevi)is connectionless transport layer p the TCP/IP protocol stack.a)TCPb)IPc)UDPd)None of thesevii)In Cohen-Sutherland algorithm,is code is assigned to each end point of the line.a)2b)3c)4d)5.viii)Find the class of the following IP a 193.171.21.23a)clASS Ab)CLASS Bc)CLASS Cd)CLASS D.ix)is the decision variable in Bre circle drawing algorithm.a) $d = 2 - 3r$ b) $d = 3 - 2r$		c)	Phosphorescence	d)	None of these.	
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 p the TCP/IP protocol stack. a) TCP b) IP c) UDP d) None of these vii) In Cohen-Sutherland algorithm, 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 a 193.171.21.23 a) CLASS A b) CLASS B c) CLASS C d) CLASS D. ix) is the decision variable in Bro- circle drawing algorithm. a) $d = 2 - 3r$ b) $d = 3 - 2r$	v)	Whe	en the point (3, 2) is r	eflec	ted in y-axis, then the	
a) $(-3, 2)$ b) $(3, -2)$ c) $(-3, -2)$ d) None of these vi)is connectionless transport layer p the TCP/IP protocol stack. a) TCP b) IP c) UDP d) None of these vii) In Cohen-Sutherland algorithm, 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 a 193.171.21.23 a) CLASS A b) CLASS B c) CLASS C d) CLASS D. ix) is the decision variable in Bre- circle drawing algorithm. a) $d = 2 - 3r$ b) $d = 3 - 2r$		coor	dinate of the reflected p	oint	will be	
c) $(-3, -2)$ d) None of these vi)is connectionless transport layer p the TCP/IP protocol stack. a) TCP b) IP c) UDP d) None of these vii) In Cohen-Sutherland algorithm, 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 a 193.171.21.23 a) CLASS A b) CLASS B c) CLASS C d) CLASS D. ix) is the decision variable in Bro- circle drawing algorithm. a) $d = 2 - 3r$ b) $d = 3 - 2r$		a)	(-3, 2)	b)	(3, -2)	
vi)is connectionless transport layer p the TCP/IP protocol stack.a)TCPb)IPc)UDPd)None of thesevii)In Cohen-Sutherland algorithm,for the line.a)2b)3code is assigned to each end point of the line.a)2b)c)4d)5.viii)Find the class of the following IP a 193.171.21.23a)CLASS Ab)c)CLASS Cd)class D.circle drawing algorithm.a)d = 2 - 3rb)d = 2 - 3rb)d = 3 - 2r		c)	(-3, -2)	d)	None of these.	
the TCP/IP protocol stack. a) TCP b) IP c) UDP d) None of these vii) In Cohen-Sutherland algorithm, 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 at 193.171.21.23 a) CLASS A b) CLASS B c) CLASS C d) CLASS D. ix) is the decision variable in Brown circle drawing algorithm. a) $d = 2 - 3r$ b) $d = 3 - 2r$	vi)		is connectionles	s tra	nsport layer protocol in	
a) TCP b) IP c) UDP d) None of these vii) In Cohen-Sutherland algorithm, for 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 at 193.171.21.23 a) CLASS A b) CLASS B c) CLASS C d) CLASS D. ix) is the decision variable in Brown circle drawing algorithm. a) $d = 2 - 3r$ b) $d = 3 - 2r$		the '	TCP/IP protocol stack.			
c) UDP d) None of these vii) In Cohen-Sutherland algorithm, is 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 at 193.171.21.23 a) CLASS A b) CLASS B c) CLASS C d) CLASS D. ix) is the decision variable in Breach circle drawing algorithm. a) $d = 2 - 3r$ b) $d = 3 - 2r$		a)	TCP	b)	IP	
vii)In Cohen-Sutherland algorithm,code is assigned to each end point of the line.a)2b)3c)4d)5.viii)Find the class of the following IP a193.171.21.23a)CLASS Ab)CLASS Bc)CLASS Cd)CLASS D.ix)is the decision variable in Brochcircle drawing algorithm.a) $d = 2 - 3r$ b) $d = 3 - 2r$		c)	UDP	d)	None of these.	
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 at 193.171.21.23 a) CLASS A b) CLASS B c) CLASS C d) CLASS D. ix) is the decision variable in Breaching algorithm. a) $d = 2 - 3r$ b) $d = 3 - 2r$	vii)	In (	Cohen-Sutherland algor	rithm	, region bit	
a) 2 b) 3 c) 4 d) 5. viii) Find the class of the following IP at 193.171.21.23 a) CLASS A b) CLASS B c) CLASS C d) CLASS D. ix)is the decision variable in Breaching algorithm. a) $d = 2 - 3r$ b) $d = 3 - 2r$		code is assigned to each end point of the line.				
c) 4 d) 5. viii) Find the class of the following IP at 193.171.21.23 a) CLASS A b) CLASS B c) CLASS C d) CLASS D. ix) is the decision variable in Breaching algorithm. a) $d = 2 - 3r$ b) $d = 3 - 2r$		a)	2	b)	3	
viii) Find the class of the following IP a 193.171.21.23 a) CLASS A b) CLASS B c) CLASS C d) CLASS D. ix) is the decision variable in Bre- circle drawing algorithm. a) $d = 2 - 3r$ b) $d = 3 - 2r$		c)	4	d)	5.	
193.171.21.23a) CLASS Ab) CLASS Bc) CLASS Cd) CLASS D.ix)is the decision variable in Brecircle drawing algorithm.a) $d = 2 - 3r$ b) $d = 3 - 2r$	viii)	Find	l the class of the	fol	lowing IP address :	
a) CLASS A b) CLASS B c) CLASS C d) CLASS D. ix) is the decision variable in Bre- circle drawing algorithm. a) $d = 2 - 3r$ b) $d = 3 - 2r$		193	.171.21.23			
c) CLASS C d) CLASS D. ix) is the decision variable in Brech circle drawing algorithm. a) $d = 2 - 3r$ b) $d = 3 - 2r$		a)	CLASS A	b)	CLASS B	
<ul> <li>ix)is the decision variable in Brech circle drawing algorithm.</li> <li>a) d = 2 - 3r</li> <li>b) d = 3 - 2r</li> </ul>		c)	CLASS C	d)	CLASS D.	
circle drawing algorithm. a) $d = 2 - 3r$ b) $d = 3 - 2r$	ix)		is the decisio	n va	riable in Bresenham's	
a) $d = 2 - 3r$ b) $d = 3 - 2r$		circl	e drawing algorithm.			
		a)	d = 2 - 3r	b)	d = 3 - 2r	
c) $d = 4 r - 5$ d) None of these		c)	d = 4 r - 5	d)	None of these.	



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.

3164

[Turn over]

		CS / BCA / SEM-3 / BCA-303 2010-11
8.	a) b)	Write Cohen – Sutherland Algorithm. 6 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.	Writ	the a short notes (any <i>three</i> ) : $3 \times 5 = 15$
	a)	Shadow masking
	b)	Orthographic and oblique projection of an object
	c)	SMTP
	d)	DNS

===============

3164

e)

FTP.