

CS/MCA/Even/4th Sem/MCA-402/2014

2014

Computer Graphics & Multimedia

Time Alloted : 3 Hours

Full Marks : 70

**The figure 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 any ten of the following:

10x1=10

- i) HTML is**
- a) Hyper Text Modification Language**
 - b) Hyper Text Mark-up Language**
 - c) Holistic Text Mark-up Language**
 - d) Hyper Text Mark-up Linguistics**
- ii) A point within the clipping boundary always will have the code**
- a) 0000**
 - b) 0001**
 - c) 0100**
 - d) 1000**
- iii) The Refreshing time for CRT display is about**
- a) 1/16 sec**
 - b) 1/110 sec**
 - c) 1/60**
 - d) none of these**
- iv) Bresenham's line drawing algorithm is better than DDA because it is based on**
- a) Floating point arithmetic**

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[Turn over]

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- b) Integer arithmetic
 - c) Slope is between 0 and 1
 - d) None of these
- v) Morphing means
- a) Changing position
 - b) Changing shapes
 - c) Changing colors
 - d) Scaling up & down
- vi) GKS means
- a) Geometric Kernel system
 - b) Graphical Kernel Software
 - c) Graphical Kernel System
 - d) Geometric Kernel Software
- vii) Cyrus Beck Line Clipping Algorithm can clip lines with boundaries
- a) Rectangular
 - b) Any convex
 - c) Both of these
 - d) None of these
- viii) Which is not a type of MPEG frame?
- a) I-frame
 - b) B-frame
 - c) A-frame
 - d) All of these
- ix) The value of Knot in Bazier curve is
- a) $0 \leq u \leq 1$
 - b) $0 \leq u \leq \text{infinity}$
 - c) Any real value
 - d) None of these
- x) In direct coding of RGB values with 4-bits per primary color, how many colors are possible for each pixel?
- a) 1024
 - b) 2048
 - c) 4096
 - d) 256
- xi) The frequency at which the content of frame buffer is sent to display monitor is called
- a) System rate
 - b) Refresh rate
 - c) Pixel rate
 - d) Flicker rate

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GROUP - B

(Short Answer Type Questions)

Answer any *three* of the following. **3x5=15**

2. What is the difference between Window and Viewport? What is clipping?
3+2
3. a) Describe difference between Gourand and Fong shading.
2.5+2.5
- b) Compare and contrast between Lossy and Lossless compression.
4. What is Hidden surface removal? Distinguish object space and image space methods for Hidden surface removal.
5. What is an applet? How can you use Java applets in HTML?
5
6. Explain Z-buffer algorithm.
5

GROUP - C

(Long Answer Type Questions)

Answer any *three* of the following. **3x15=45**

7. a) What is scan-conversion?
- b) Deduce Bresenham's Line Drawing Algorithm, showing clearly the mathematical calculations involved.
- c) Write the scan line polygon filling algorithm and explain associated data structure.
2+6+7
8. a) Derive the composite matrix when reflection is taken with respect to the straight line $y = a$ where 'a' is constant.
- b) Explain Cyrus-Beck clipping algorithm.
7+8

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9. a) Give the basic steps/ algorithm of JPEG compression.
b) Describe the use of <FRAMESET> tag with example.
c) Derive the conditions for smooth joining of two Bezier curve segment of degree three.
- 7+3+5**
10. a) Write scan line Polygon filling algorithm and explain associated data structure.
b) Generate Seed fill algorithm for Polygon filling.
c) What is Aliasing? How can we reduce Aliasing?
- 7+5+3**

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