



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/M.Sc. (INFO. Sc)/SEM-3/MI-302/2012-13**

**2012**

**COMPUTER GRAPHICS & MULTIMEDIA**

*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.*

Answer any *five* questions.

5 × 14 = 70

1.
  - a) Define Refresh Rate.
  - b) Write different steps of Bresenham's Circle drawing algorithm.
  - c) Draw a line through the point (2,5) to (10,11) using Slope algorithm. 2 + 7 + 5
2.
  - a) What is the importance of clipping ?
  - b) Consider a clipping window where XL = 100, XR = 160, YB = 10, YT = 40. Find the visible portion of the line gh where g (120,20) and h(140,80).
  - c) Write functionality of CRT monitor. 3 + 7 + 2 + 2



3.
  - a) Why cubic Bezier curve is widely used ?
  - b) Write smoothly joining condition of two Bezier curve segments.
  - c) Let  $B_0, B_1, B_2$  and  $B_3$  are 4 control points of a Bezier curve. Find another 4 control points of another Bezier curve which will join smoothly with the first one.
  - d) Write application area of Bezier curve.  $4 + 4 + 5 + 1$
4.
  - a) Find the new coordinate of a Rectangle ABCD after doubling the size while keeping in mind that the point A will be remain fixed after scaling. Here  $A(40,40), B(100,40), C(100,80), D(40,80)$ .
  - b) Determine transformation matrix of rotation with respect to origin.
  - c) What are the differences between parallel projection and perspective projection ?  $7 + 5 + 2$
5.
  - a) Define Animation ? Briefly discuss the difference between Keyframe animation and Cell animation.
  - b) Explain the applications of Virtual Reality.
  - c) Differentiate between Vector and Raster graphics.
  - d) What are the characteristics of Multimedia system ?

$2 + 3 + 3 + 3 + 3$



6. a) What is MP3 ?  
b) Explain MIDI file header format.  
c) What are lossy and lossless compression techniques ?  
d) Write down the basic steps of MPEG encoding process with block diagram.  
e) Define Hypertext and Hypermedia. 2 + 3 + 3 + 3 + 3
7. a) What is Real Time Streaming ? Briefly discuss the video standards for Broadcasting signals.  
b) Explain HSB colour model.  
c) Why CMYK and RGB are called complementary colour model ? 2 + 6 + 3 + 3

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