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B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2012.

Fifth Semester

Computer Science – Main

Paper VII — COMPUTER GRAPHICS AND
MULTIMEDIA

(For those who joined in July 2008 and afterwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The device which is used to select a particular graphical object
- (a) locator (b) selector
- (c) collector (d) vector

2. Example of selector
- (a) Mouse (b) Joystick
- (c) Trackball (d) Light pen
3. Algorithm of filling interior of a polygon with pre-defined pattern is called
- (a) pattern fill (b) flood fill
- (c) boundary fill (d) scan line fill
4. A set of vertices is mathematically known as
- (a) polygon (b) line
- (c) vector (d) pixel
5. Alteration and manipulation of displayed graphical objects are classified under the generic name
- (a) geometrical transformation
- (b) translation
- (c) pivot point
- (d) polar coordinates
6. _____ can be performed in an anticlockwise or a clockwise direction
- (a) rotation (b) reflection
- (c) shearing (d) scaling

7. The algorithm that deals with a line in parametric form

- (a) Cohen Sutherland
- (b) Mid-point subdivision
- (c) Liang – Bassky
- (d) Cyrus beck

8. A polygon is said to be concave if any of the cross product has

- (a) –ve z component (b) +ve z component
- (c) +ve x component (d) +ve y component

9. Expand RIF

- (a) Resource interchange format
- (b) Resource interlacing format
- (c) Random interchange format
- (d) Redundant interchange format

10. Expand MIDI

- (a) Multi–user Dimensions
- (b) Multimedia digital interface
- (c) Musical instrument digital interface
- (d) Multimedia dimensions.

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) List some of the major advantages of Computer Graphics.

Or

(b) How is Computer Graphics used in simulation and animation?

12. (a) Derive the DDA equation for ellipse.

Or

(b) Derive the DDA equation for parabola.

13. (a) Explain two dimensional translation.

Or

(b) Derive the inverse scaling transformation matrix.

14. (a) Give the concept of Cohen – Sutherland Clipping Algorithm.

Or

(b) What are the conditions to clip a point within a window?

15. (a) Describe Audio Sampling.

Or

(b) Write a short note on multimedia authoring tools.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

16. (a) Explain Plasma Panel Display in detail.

Or

(b) Describe in detail LCD Panels.

17. (a) Explain the problems of scan conversion.

Or

(b) Explain Bresenham's line drawing algorithm.

18. (a) Explain 3-D rotation.

Or

(b) Explain 3-D reflection.

19. (a) Describe Sutherland – Hodgman Polygon Clipping.

Or

(b) Compare the efficiency of clipping obtained using the mid-point subdivision technique and Sutherland – Cohen algorithm.

20. (a) Explain MIDI.

Or

(b) Explain GIF format.