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Reg. No. : .....

Code No. : 30383 E      Sub. Code : SMCS 62/  
SMSE 62

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2022

Sixth Semester

Computer Science/Software Engineering — Core

COMPUTER GRAPHICS AND VISUALIZATION

(For those who joined in July 2017 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. In which system, the shadow mask methods are commonly used \_\_\_\_\_
  - (a) Raster-Scan system
  - (b) Random-scan system
  - (c) Direct-view storage
  - (d) Flat-panel

2. The Cartesian slope-intercept equation for a straight line is \_\_\_\_\_

- |                  |                 |
|------------------|-----------------|
| (a) $y = m.x+b$  | (b) $y = b.x+m$ |
| (c) $y = x.x.+m$ | (d) $y = b+m.m$ |

3. The basic attributes of straight line segments are \_\_\_\_\_

- |           |                  |
|-----------|------------------|
| (a) Type  | (b) Width        |
| (c) Color | (d) All of these |

4. The two-dimensional translation equation in the matrix forms is \_\_\_\_\_

- |                |                |
|----------------|----------------|
| (a) $P' = P+T$ | (b) $P' = P-T$ |
| (c) $P' = P*T$ | (d) $P' = P$   |

5. A view is selected by specifying a sub-area of \_\_\_\_\_ picture area.

- |          |             |
|----------|-------------|
| (a) Half | (b) Total   |
| (c) Full | (d) Quarter |

6. Which type of clipping is used to clip character strings?

- |                       |                   |
|-----------------------|-------------------|
| (a) Text clipping     | (b) Line clipping |
| (c) Sentence clipping | (d) Word clipping |

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7. \_\_\_\_\_ a device for specifying a coordinate position (x, y).

- (a) LOCATOR                      (b) STROKE  
(c) VALUATOR                    (d) CHOICE

8. The transformation in which an object can be shifted to any coordinate position in three dimension plane are called \_\_\_\_\_

- (a) Translation                      (b) Scaling  
(c) Rotation                          (d) Shearing

9. A commonly used image-space approach to detecting visible surfaces is the \_\_\_\_\_

- (a) back faces  
(b) depth-buffer method  
(c) a-buffer method  
(d) depth-sorting

10. The types of projections are \_\_\_\_\_

- (a) Parallel and perspective projection  
(b) Perpendicular and perspective projection  
(c) Parallel and perpendicular projection  
(d) None

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PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Discuss about point and lines.

Or

(b) Illustrate the DDA line drawing algorithm.

12. (a) Write short notes on text attributes.

Or

(b) Explain in detail about reflection and shear.

13. (a) Narrate the viewing pipeline in two dimensional.

Or

(b) Describe the point clipping with equation inequalities.

14. (a) Enumerate the values of locator and stroke input in request mode.

Or

(b) Outline about surface rendering and depth cueing display methods in three dimensions.

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15. (a) Give an account of perspective projection.

Or

- (b) Denote the classification of visible-surface detection algorithm.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Explain the following :

- (i) Refresh cathode ray tubes
- (ii) Raster scan display
- (iii) Flat panel display.

Or

- (b) Illustrate the circle-generating algorithm with neat diagram.

17. (a) Elucidate note on line attributes.

Or

- (b) Summarize the basic two-dimensional geometric transformation.

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18. (a) Clarify about two dimensional viewing.

Or

- (b) Explain Sutherland hodgeman polygon clipping.

19. (a) Analyze the input of Graphical data.

Or

- (b) Elaborate on three dimensional display methods

20. (a) Elucidate the any two visible-surface detection methods.

Or

- (b) Explain in detail about three dimensional viewing.

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