

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2023.

Sixth Semester

Computer Applications – Core

COMPUTER GRAPHICS

(For those who joined in July 2017-2020)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

- Which of the following statements define Computer Graphics?
 - It refers to designing plans
 - It means designing computers
 - It refers to designing images
 - None of the mentioned

- Which one of the following is the primarily used out put device?
 - Video monitor
 - Scanner
 - Speaker
 - Printer
- From the given list of options. which one is the accurate and efficient line-generating algorithm?
 - Midpoint algorithm
 - Bresenharm's Line algorithm
 - DDA algorithm
 - None of the above
- The Cohen-Sutherland algorithm divides the region into how many spaces?
 - 9
 - 8
 - 7
 - 6
- Which of the following equation is used in 2D translation to move a point(x,y) to the new point (x',y')?
 - $x' = x + t_x$ and $y' = y + t_y$
 - $x' = x - t_x$ and $y' = y - t_y$
 - $x' = x + t_x$ and $y' = y + t_y$
 - $x' = x + t_x$ and $y' = y - t_y$

- The process of repositioning an object along a circular path is called
 - Translation
 - Rotation
 - Scaling
 - None of the above
- Clipping in computer graphics is primarily used for _____
 - zooming
 - copying
 - removing objects and lines
 - All of the above
- Sutherland-Hodgeman clipping is an example of _____ algorithm.
 - line clipping
 - polygon clipping
 - text clipping
 - curve clipping
- The method which is based on the principle of checking the visibility point at each pixel position on the projection plane are called _____
 - Image-space methods
 - object-space methods
 - Both (a) and (b)
 - None of these

- Which surface algorithm is based on perspective depth?
 - Depth comparison
 - back-face removal
 - subdivision method
 - Z-buffer or depth-buffer algorithm

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

- Write note
 - graphics packages
 - requirements of a graphical system

Or

 - Give brief note on plotters.
- Sketch about DDA Circle drawing algorithm.

Or

 - Write about solid area filling.
- Paraphrase translation in two dimension transformations.

Or

 - Express about sealing in three dimension transfer.

14. (a) What is parametric clipping?

Or

(b) Summarize mid-point subdivision method.

15. (a) Write a note on Hidden surface removal.

Or

(b) Mention the limitations of depth buffer method.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Explain application and operations of Computer graphics.

Or

(b) Express about memory tube displays.

17. (a) Elucidate Bresenham's Line drawing algorithm.

Or

(b) Illustrate Boundary fill algorithm.

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18. (a) Elaborate on Scaling.

Or

(b) Write in detail about 3-D rotation.

19. (a) Illustrate how Window to Viewport transformation works?

Or

(b) Elucidate Cohen Sutherland line clipping algorithm.

20. (a) Explain in detail about z-buffer algorithm with suitable example.

Or

(b) Write in detail about back face removal algorithm.

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