

Roll No.

Total No. of Questions : 09]

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MCA (Sem. - 5th)
COMPUTER GRAPHICS
SUBJECT CODE : MCA - 501 (N2)
Paper ID : [B0122]

[Note : Please fill subject code and paper ID on OMR]

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Time : 03 Hours

Maximum Marks : 60

Instruction to Candidates:

- 1) Attempt any one question from each Sections A, B, C & D.
- 2) Section - E is **Compulsory**.
- 3) Use of Non-programmable **Scientific Calculator** is allowed.

Section - A

(1 × 10 = 10)

- Q1)** What are the raster and random scan display devices? Discuss the advantages and limitations of each in detail.
- Q2)** Write short note on:
- (a) Data glove and digitiser.
 - (b) Drum plotter.

Section - B

(1 × 10 = 10)

- Q3)** What is the principle of mid point algorithm for scan converting an object? Discuss the algorithm for circle generation.
- Q4)** What is the difference between geometric and coordinate transformations? Discuss the various 2D geometric transformations.

Section - C

(1 × 10 = 10)

- Q5)** What is the use of projections in computer graphics? Discuss the perspective and parallel projections.
- Q6)** Find a transformation A_v which aligns a given vector v with vector k along the positive z-axis.

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Section - D

(1 × 10 = 10)

Q7) Discuss the sub division method for hidden surface removal. How it is different from scan line method?

Q8) Write the short note on:

- (a) Half toning.
- (b) Gourand shading.

Section - E

(10 × 2 = 20)

Q9)

- a) What is the data glove?
- b) What do you mean by scan converting an object?
- c) What is interlacing in raster scan displays? What is its advantage?
- d) What is aspect ratio of display devices? What is its importance?
- e) What is the scan line polygon fill algorithm?
- f) What is the importance of homogenous coordinates?
- g) What is viewing transformation?
- h) What is the area subdivision method for hidden surface removal?
- i) What is the diffuse reflection?
- j) What is the Phong shading?

