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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]

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 followed.

Section - A

(1 × 10 = 10)

Q1) Why LCD is termed as Flat Panel Display? Explain its working principle.

Q2) Write a note on :

(a) Voice System.

(b) Role of CCD in an Image Scanner.

(c) Working of Joystick.

(d) Advantage of feedback in a graphical input technique.

Section - B

(1 × 10 = 10)

Q3) Discuss the Bresenham's circle rasterizing algorithm.

Q4) What is the homogeneous equation of a line? Write a formula for the intersection of the two lines specified in homogeneous form? What is the homogeneous equation of a plane?

Section - C

(1 × 10 = 10)

Q5) How rotation is done in 3D objects? Explain in detail with help of example.

Q6) Explain the terms : Projection plane, view plane, coordinate and view volume with regard to 3D graphics. State and explain the anomalies of perspective projection.

Section - D

(1 × 10 = 10)

Q7) (a) Discuss various projections of an object in a view plane.

(b) Briefly define the types of shadow.

Q8) (a) What are the conditions to clip a point within a window.

(b) Give the advantages of Phong shading over Gouard shading.

Section - E

(10 × 2 = 20)

Q9) a) Enumerate the difference between pointing devices and positioning devices.

b) Is plotter a vector graphic device? Justify your answer.

c) Name the two inkjet technologies used by printer manufactures.

d) What are the advantages of digital video?

e) What are the three basic parts of a display system?

f) Define scaling.

g) Differentiate between World co-ordinate system and User co-ordinate system.

h) Define the basic principles of Reflection Transformation.

i) Why boundary fill algorithm is weaker than scan line fill algorithm?

j) Differentiate between ambient light and diffused light.

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