COURSE CODE : DCAP504
COURSE NAME : COMPUTER GRAPHICS

Time Allowed: 03:00 hrs   *Max.Marks: 80*

1. This question paper is divided into two parts A and B.
2. Answer all the questions in serial order.
3. Part A contains 10 questions of 2 marks each. All questions are compulsory.
4. Part B contains 10 questions (Questions 2 to 11) of 10 marks each, attempt any 06 questions out of 10.
Attempt all parts of the selected question. Only first 06 attempted questions would be evaluated.
5. The student is required to attempt the question paper in English medium only.
6. Simple non programmable calculator is allowed.

PART A

Q1(a) What is the applications of computer graphics? Explain.
(b) "The term "refresh-rate" refers to the display screen which is being updated and refreshed". Explain.
(c) Explain the process of aliasing.
(d) How do you scale a 2-D object using transformation matrix?
(e) Discuss the different stages of a graphic pipeline.
(f) In Midpoint Subdivision algorithm, when do you start subdividing a line?
(g) Explain parallel projections.
(h) "Only those surfaces or portions of the object are visible which are drawn in counter-clockwise direction." Justify.
(i) "Gourand shading provides much better image than constant shading." Explain.
(j) Discuss the three scenarios required for additional visual effects.

PART B

Q2 Discuss the window-to-viewport relationship with the help of an example.

Q3 "Constant shading is useful only when some assumptions are true". Explain those assumptions.

Q4 Photography was not adequate to visualize the cuneiform tablets. Justify.

Q5 "Bresenham's algorithm can be successfully used for drawing lines on a computer screen, subtracting, and bit shifting." Discuss.

Q6 What is projection? Explain the various techniques of it in detail.

Q7 Differentiate using an appropriate example the working difference between Raster scan displays and Random scan displays.

Q8 With the help of diagram, Illustrate the working of Liang-Barsky algorithm.

Q9 With the help of diagrams, Illustrate the working of Weiler Atherton polygon clipping algorithm to clip a polygon

Q10 Apply scaling on the triangle with vertices A(0,0), B(1,1) and C(5,2) to twice its size while keeping C(5,2) fixed.

Q11 With the help of an example, Explain Z-buffer hidden surface removal method.
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