**Student Registration No**

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## COURSE CODE: DCAP504

## COURSE TITLE: COMPUTER GRAPHICS

**Date of Exam: 5 March** **Session 09:30-12:30**
**Time Allowed: 3 hours** **Max. Marks: 80**

1. *This paper contains 10 questions divided in two parts on 1 page.*
2. ***Part A is compulsory.***
3. ***In Part B (Questions 2 to 10), attempt any 6 questions out of 9. Attempt all parts of the questions chosen.***
4. *The marks assigned to each question are shown at the end of each question in square brackets.*
5. *Answer all questions in serial order*.
   The student is required to attempt the question paper in ***English medium only.***

## PART-A

Q1.

a. Define Mandelbrot set in context to computer graphics.

b. Define Aspect Ratio.

c. What are the advantages of Bresenham algorithm for scan conversion of line.

d. What do you mean by relative scaling?

e. What do you mean by window to viewport mapping?

f. What do you mean by point clipping?

g. What are the various types of parallel projection?

h. What are the object space methods in context to hidden surfaces?

i. What do you mean by Ambient Light?

j. What do you mean by morphing? (10x2=20)

## PART-B

Q2. Explain in detail the various types of printers.

Q3. Differentiate between Raster scan and Random scan display systems?

Q4. Scan convert circle of radius 15 units using bresenham algorithm.

Q5. Scale a triangle having coordinates A(2,3), B(8,9) and C(4,4) uniformly by twice of its size with respect to point (-1,-2).

Q6. Explain the Liang- Barsky algorithm of line clipping.

Q7. Explain the taxonomy of projections in detail.

Q8. How can we clip a polygon using Sutherland Hodgeman Algorithm?

Q9. Explain any two interpolative shading methods of intensity calculations?

Q10. Explain in detail the basic algorithm of ray tracing? (6x10=60)