

Total No. of Pages : 02

Total No. of Questions : 18

B.Tech.(CSE) (2011 Onwards) (Sem.-5)

COMPUTER GRAPHICS

Subject Code : BTCS-504

Paper ID : [A2100]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. **SECTION-A is COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students has to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students has to attempt any **TWO** questions.

SECTION-A

Answer briefly :

1. What are fractals? What is their need?
2. What is ray tracing? Explain.
3. What are vanishing points? Explain.
4. What is the main difference between random and raster scan?
5. What will be the change in the 3D rotation matrix if the rotation is clock-wise?
6. Why the homogeneous coordinates are used?
7. What is the centre of projection in perspective projection?
8. What are edge and fence filling algorithms?
9. Explain screen and world coordinates with example.
10. List various region filling algorithms.

SECTION-B

11. Explain ellipse generating algorithm.
12. Distinguish between random and raster scan algorithms.
13. Differentiate between Gouraud and Phong shading.
14. What is the difference between boundary fill and flood-fill algorithms? Write 8- boundary fill algorithm.
15. Explain the steps in the Z-buffer algorithm.

SECTION-C

16. Explain the Gouraud shading technique in detail.
17. Distinguish between parallel and perspective projections.
18. Prove that the multiplication of three transformation matrices for each of the following sequence of operations is commutative :
 - a) Any two successive translations.
 - b) Any two successive scaling operations.