

Roll No.

Total No. of Pages : 3

MCA/D11

4560

Computer Graphics

Paper : MCA-501

Time : Three Hours]

[Maximum Marks : 80

Note :- Attempt **FIVE** questions in all. Question No.1 is compulsory. Attempt **FOUR** more questions selecting **ONE** from each Units I, II, III and IV. Question No.1 is of 24 marks. All the other questions are of 14 marks each.

(Compulsory Question)

1. Answer the following questions in brief :-

- (a) What will be the size of the frame buffer if the resolution of the display device is 1024×1024 and each pixel can glow with 64 different colors.
- (b) What is the relationship between the terms resolution, persistence and interlacing ?
- (c) What are homogeneous coordinates ?
- (d) Describe one method for generating an ellipse.
- (e) Distinguish between pointing and positioning with reference to suitable applications.
- (f) Describe the rotation transformation for rotating a point w.r.t. the origin.
- (g) Derive the screen coordinates when perspective projection is used.
- (h) Describe how interpolation is used in tweening.

- (b) Explain architecture and features of linux in detail. 7
3. (a) What do you understand by regular expression ? Explain various types of regular expression in detail. 8
- (b) Explain three commands each under communication and process category. 6

UNIT-II

4. (a) What is a file ? Discuss various types of files in linux. 4
- (b) What is a file system ? Explain various components and types of file system. How can you mount and unmount a file system in linux ? 10
5. (a) Discuss the procedure for creating a process in linux. What is the purpose of init process ? 6
- (b) Explain the purpose of following in detail :
- (i) at
 - (ii) batch
 - (iii) cron
 - (iv) time.
- 8

UNIT-III

6. (a) Write a script that accepts a pattern and file name as arguments and then counts the number of occurrences of the pattern in the file. 7
- (b) Discuss various control structures and loops in shell in linux. 7
7. (a) What are the various privileges that are available to the linux administrator ? How security can be maintained in linux ? 9
- (b) Explain the booting process in linux. 5

UNIT-IV

Total No. of Pages: 3

8. Derive the information required to model a 3-D cube having the origin of the coordinate system placed at its center and each vertex of the cube at a distance of 2 units from the center. What is the significance of specifying plane equations of the faces of an object in modeling?
9. Compare depth buffer algorithm with depth sort algorithm for identifying hidden surfaces.