Sem-V (CBSGS) / INFT / Computer Graphics & Virtual Reality / May-2016.

QP Code : 31109

(2½ Hours) [Total Marks : 80

N.B. : (1) Question 1 is compulsory.
(2) Attempt any three questions from the remaining questions.
(3) Assume suitable data wherever applicable.
(4) Draw figures wherever applicable.

1. (a) Differentiate between Raster scan display and Random scan display. 5
(b) Prove that two successive rotation transformations are additive 5
(c) Show that the transformation matrix for a reflection about a line y = x is equivalent to reflection to x-axis followed by counter clockwise rotation of 90 °. 5
(d) Explain 3D trackers & enumerate some important trackers characteristics 5

2. (a) Specify highlights and drawbacks of Bezier curve. Construct the Bezier curve of order three with control points P1(0,0),P2(1,3),P3(4,2) and P4(2,1).Generate at least five points on the curve. 10
(b) Write DDA Line drawing Algorithm. Compare DDA with Bresenham's Line drawing Algorithm. Calculate the pixel co-ordinates of line Abusing DDA Algoritlm1 where A=(0,0) and B=(4,6). 10

3. (a) Let ABCD be the rectangular window with A (20,20), B(90,20), C(90,70) and D(20,70). Find region codes for endpoints and use Cohen Sutherland algorithm to clip the lines
P1 P2 with P 1 (10,30), P 2 (80,90) 10
(b) With respect to 3D transformations, describe the steps to be-carried out when an object is to be rotated about an arbitrary axis. Specify all the required matrices. State your assumptions clearly. 10

4. (a) Explain Flood Fill Algorithm for 4 connected and 8 connected. What are its advantage over Boundary Fill Algorithm 10
(b) Explain an algorithm which uses parametric equation of line clipping. Using same algorithm find the line segment A(10, 10) and B(70,40) after it is clipped against the window of two vertices (20,20) and (40,50). 10

5. (a) Consider a triangle ABC whose coordinates are A (1 0, 20) B (30, 40) and 8 C (50, 20). Perform the following transformations (Specify the matrices that are used) 10
   (i) Translate the given triangle by 3 units in X direction and -2 units in Y direction.
   (ii) Rotate the given triangle by 30.
   (iii) Reflect the given triangle about X = Y
   (iv) Scale the given triangle uniformly by 2 units.

   (b) What is the significance of modeling in virtual reality? Explain any modeling technique used in virtual reality. 10

6. Write a short note on (Any five):
   (a) Homogeneous Coordinates. 5
   (b) Text Clipping. 5
   (c) fractals 5
   (d) B- spline curve 5
   (e) Morphing and warping. 5

TE/INFT/Sem-V(CBSGS)/ADMS/MAY-16

QP Code : 31193

Marks: 80

(Time: 3 Hrs)

N.B. : 1. Question no. 1 is **compulsory**.
2. Solve any **Three** questions out of remaining **Five** questions.

Q-1 a) What is referential integrity? Explain with suitable example. **5**

b) Explain in short Object Query Language (OQL). **5**

c) Explain in short dynamic SQL. **5**

d) List the different types of transparencies in distributed databases and explain any one in detail. **5**

Q-2 a) Differentiate between
i. Data Warehouse Modeling Vs Operational Database Modeling. **5**
ii. OLTP vs OLAP **5**

b) Explain Dynamic Multilevel Indexes Using B-Trees or B^+-Trees. **10**

Q-3 a) What are the different types of SQL injection attacks? What risks are associated with it? Explain any one attack in detail. **10**

b) Consider the following database that has to be distributed: **10**

PROJ (**PNO**, PNAME, BUDGET)
PAY (**TITLE**, SALARY)
EMP (**ENO**, ENAME, TITLE)
ASG (**ENO, PNO**, RESPONSIBILITY, DURATION)

1. Show 2 examples of horizontal fragmentation.
2. Show 1 example of derived fragmentation.
3. Show 1 example of vertical fragmentation.

Q-4 a) Explain with suitable example object identity, object structure and type constructors in OODB's. **10**

b) Explain with suitable example "Star Schema". **10**

Q-5 a) Explain ECA model with suitable example. **10**

b) Explain Discretionary Access Control based on Granting and Revoking Privileges **10**

Q-6 a) Explain in short the concerrency control in distributed databases. **10**

d) Explain ETL phase in creating a data warehouse **10**

INFT/ Sem Vth / KT / Open-source Technologies / May-16

QP Code : **31234**

(3 Hours) [**Total Marks : 80**

N. B. : (1) Question No. 1 is compulsory.
(2) Attempt any three questions from remaining questions.
(3) Draw suitable diagram wherever necessary.
(4) Assume suitable data, if necessary.

1. Attempt all **four** sub questions.
   (a) Explain features of Linux 5
   (b) Describe Swap partition in Linux 5
   (c) Explain permissions on directory 5
   (d) Describe 'AndroidManifest.xml' file components 5

2. (a) What is data persistency in Android 10
   (b) Which are major components associated with Android application 10

3. (a) What is an Activity ? How is it created? 10
   (b) Explain concept of vi editor and give commands to move a cursor around, to insert text, to delete text, to cut & paste text, and to save & quit files. 10

4. (a) Explain concept of 'Links' and its types? 10
   (b) Explain command line editors 'sed' & 'gawk' with example 10

5. (a) Discuss significance of given files-./etc/passwd, /etc/shadow, /etc/group 10
   (b) Explain with examples given commands- chmod, chown, chgrp 10

6. (a) Explain following networking command- 10
   snetstat, ping, host, traceroute, route
   (b) Write short note on - process management in Linux 10
