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Barasat, Kolkata -700125

BRAINWARE UNIVERSITY

Term End Examination 2023

Programme – Dip.CSE-2018/Dip.CSE-2019/Dip.CSE-2020

Course Name – Computer Graphics

Course Code - DCSE502

(Semester V)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) Tell that the phenomenon of having a continuous glow of a beam on the screen even after it is removed is called as
- | | |
|--------------------|------------------|
| a) persistence | b) persistence |
| c) phosphorescence | d) incandescence |
- (ii) Select that graphics can be
- | | |
|---------------|-----------------------|
| a) Drawing | b) Photograph, movies |
| c) Simulation | d) All of these |
- (iii) Identify that Raster graphics are composed of
- | | |
|-------------|------------------|
| a) Pixels | b) paths |
| c) Patterns | d) None of these |
- (iv) Select the below when sequencing and display of a set of images to create a visual change effect is called
- | | |
|-------------------------|-----------------------------|
| a) Computer animations | b) Computer graphics |
| c) Computer videography | d) Computer image terminals |
- (v) Select the expansion of line DDA algorithm
- | | |
|----------------------------------|---------------------------------|
| a) Digital difference analyzer | b) Direct differential analyzer |
| c) Digital differential analyzer | d) Data differential analyzer |
- (vi) Identify If the boundary is specified in a single color, and if the algorithm proceeds pixel by pixel until the boundary color is encountered is called
- | | |
|-----------------------------|-----------------------------|
| a) Scan-line fill algorithm | b) Boundary-fill algorithm |
| c) Flood-fill algorithm | d) Parallel curve algorithm |
- (vii) Choose aspect ratio is generally defined as the ratio of the
- | | |
|---|--|
| a) Vertical to horizontal points | b) Horizontal to vertical points |
| c) Vertical to (horizontal + vertical) points | d) Either A or B, depending on the convention followed |
- (viii) Choose from the maximum number of points that can be displayed without overlap on a CRT is referred to as

- a) Resolution
c) Attenuation
- (ix) Solve and find the slope of the line joining the points (1, 2) and (3, 4)
- a) 0
c) 2
- (x) Analyze and tell that _____ is a rigid body transformation that moves objects without deformation
- a) Rotation
c) Translation
- (xi) Select what it is known if the rotation axis that is perpendicular to the xy plane and passes through the pivot point
- a) Rotation
c) Scaling
- (xii) Select what is it called if a line joining any of its two interior points lies completely within it
- a) Concave polygon
c) Both
- (xiii) Select what is it called when the transformation that produces a parallel mirror image of an object
- a) Reflection
c) Scaling
- (xiv) Write what it is called when mapping the world co-ordinates into physical device co-ordinates are done
- a) translation
c) co-ordinate conversion
- (xv) Write Cohen-Sutherland subdivision line clipping algorithm uses _____ regions with different codes
- a) 8
c) 6
- b) Persistence
d) None of these
- b) 1
d) 3
- b) Scaling
d) All of the mentioned
- b) Translation
d) Shearing
- b) Convex polygon
d) None of these
- b) Shear
d) Rotation
- b) shearing
d) homogeneous transformation
- b) 48
d) 9

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Write DDA Line drawing algorithm (3)
3. Write about the types of aliasing effect (3)
4. Write the differences between Random Scan and Raster Scan (3)
5. Explain Mid-Point Line Drawing Algorithm (3)
6. Illustrate how window to viewport mapping is done (3)

OR

Calculate intermediate points using Bresenham's Line Drawing Algorithm when Starting and Ending position of the line are (1, 1) and (8, 5). (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Define Rotation about fixed point (5)
8. Discuss Cohen Sutherland Line Clipping Algorithm (5)
9. Write down about Flood Fill Algorithm (5)
10. Calculate and plot intermediate points to form the line from (0,0) to (10,10) using DDA Algorithm (5)
11. Compare and contrast between DDA and Bresenham's line algorithm (5)
12. Calculate and draw a line from (15,34) to (25,22) using Bresenham's line algorithm (5)

OR

Illustrate a 60 Degree rotation of triangle A(0,0),B(1,1),C(5,2) about the origin

(5)

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