

UNIT-3

1. What is sweep and What are the types?

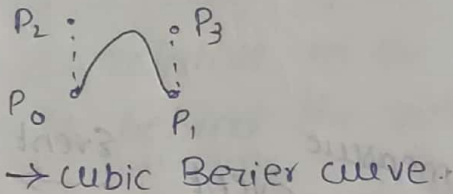
A. Sweep :- It used to construct three dimensional object from two dimensional shape.

Two types :-

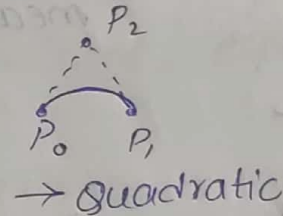
1. Translation
2. Rotational

2. Degree and control points of cubic bezier and Quadratic bezier curve.

A. Cubic Bezier curve
 $n=4$ degree = 3



Quadratic curve
 $n=3$ degree = 2



3. B-spline curve property?

A. * The sum of the B-spline basic functions for any parameter value is 1.

* The curve generally follows the shape of the defining polygon.

* Each basic function is positive or zero for all parameter values.

* The curve lies within the convex hull.

4. What are the uses of Fractal?

A. * It is used in Astronomy using in analysis of galaxy and ring of Saturn.

* It also used in biology and chemistry for cultures and reactions.

* It is also used in model soil erosion, image compression, data compression, music and landscape.

5A. Difference b/w Objectspace and Imagespace.

Objectspace UNIT-4 Imagespace

- * Image space is object based method.
- * Surface visible is determined.
- * These were developed for vector graphics system.
- * It is a pixel based method.
- * Line visibility or point visibility is determined.
- * These were developed for raster devices.

6A. Halftone :- The process of generating a binary pattern of black & white dots from an image is turned as Halftone.

- * It is used to reproduce an image by using dots of varying length with one or more colours.

Dithering :- Dithering is used to create additional colours and shades from an existing palette by interspersing pixel of different colors.

- * each pixel produces quantization error.
- * It is possible to improve the quantity of a quantized image by distributing the quantized error.

7A. Dithering Techniques :-

$$i = (x \bmod n) + 1 \quad j = (y \bmod n) + 1$$

$$n \begin{bmatrix} 4 Dn/2 + D_2(1,1)Un/2 & 4 Dn/2 + D_2(1,2)Un/2 \\ 4 Dn/2 + D_2(2,1)Un/2 & 4 Dn/2 + D_2(2,2)Un/2 \end{bmatrix}$$

$$n \geq 4.$$

8A. What are the polygon Rendering method types?

There are three types.

1. Flat Shading :-

- * Entire surface have one color & cheap one.

2. Gouraud shading :- compute illumination at vertices

3. phong shading :- Compute illumination at every pixel.

9. Warn Model :- It provides a method for simulating studio lighting effects by controlling light intensity in different directions is called warn model

There are 3 types :-

1. Ambient

2. Diffuse

3. Specular.

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10. Types of curves :-

There are 3 types of curves

1. Implicit.

2. Explicit.

3. parametric.