

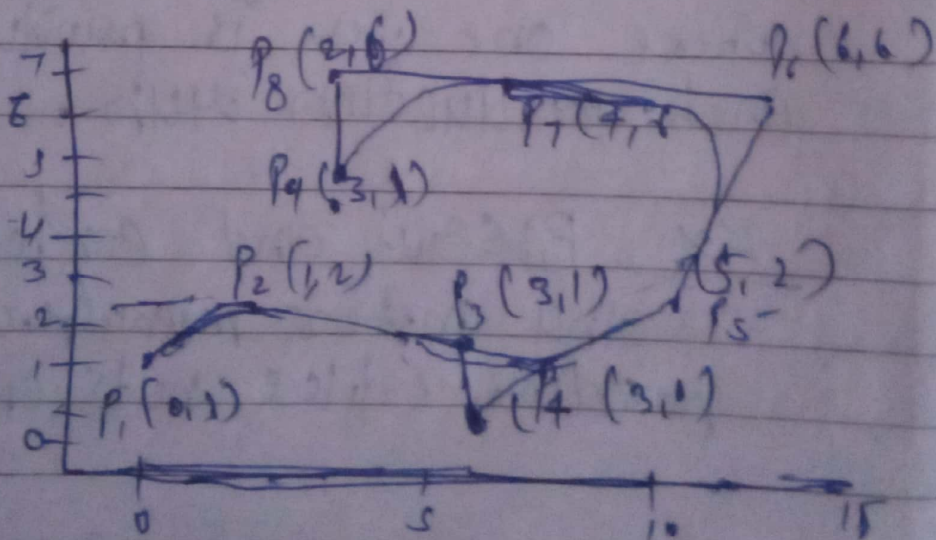
Q.3

Different b/w Bezier Curve and B-spline Curve?

B-spline Curves:

(i) B-spline is basis spline function which contains a set of control point

(ii) B-spline function is a combination of flexible band that passes through the numbers of control points and creates a smooth curve.



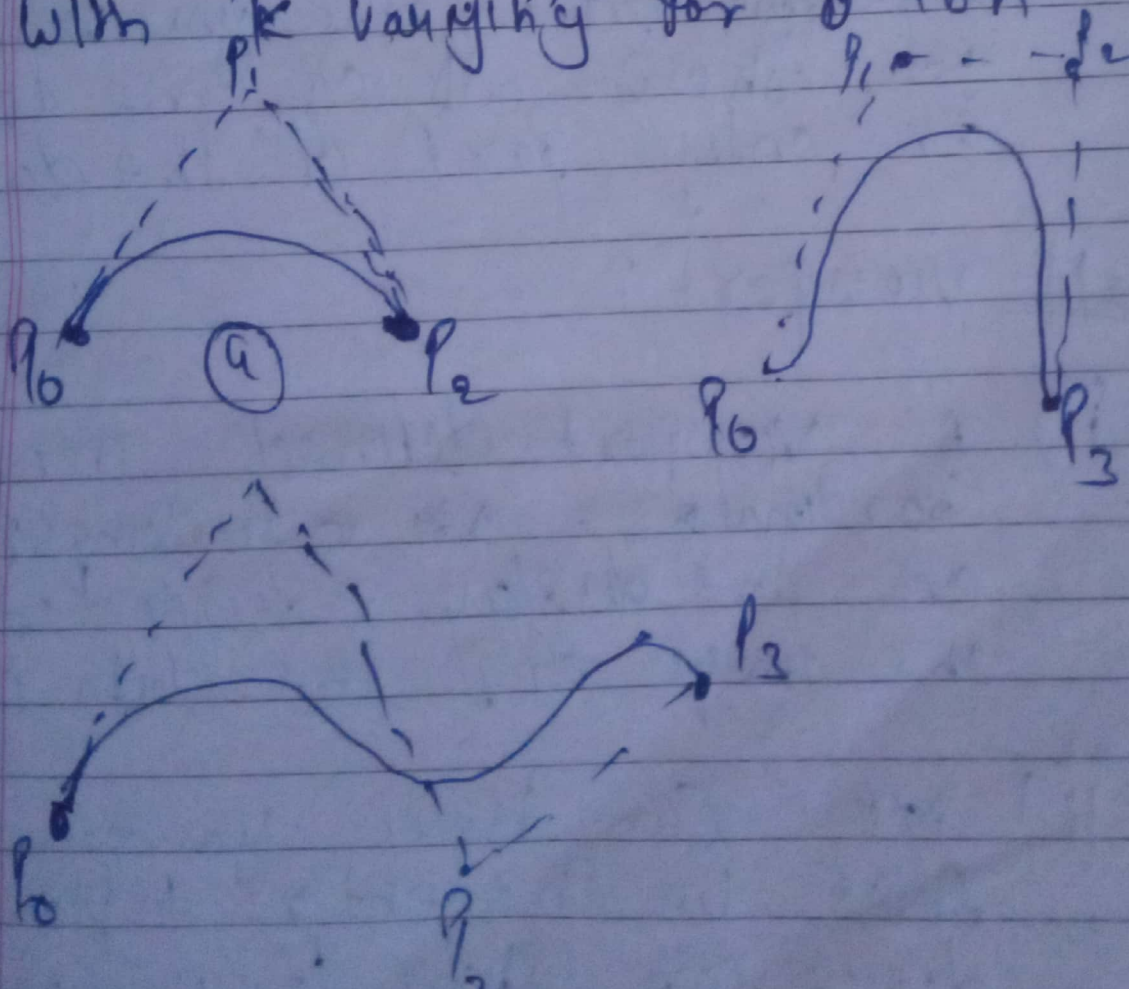
$$P(u) = \sum_{k=0}^n P_k B_{k,n,d}(u, u_{\min})$$

$u_{\min} \leq u \leq u_{\max}$
 $0 \leq k \leq n+1$

Bezier Curves:

- (i) A Bezier Curve section can be fitted to any number of Control points
- (ii) The number of Control points to be approximated and their relative position determine the degree of Bezier Polynomial.
- (iii) For general Bezier Curves, the blending function specification is most convenient.

(iv) Suppose we are given $n+1$ Control point positions: $P_k = (x_k, y_k, z_k)$ with k varying for 0 to n



Different b/w window and viewport:

windows: A window defines a rectangular area in world coordinates.

(i) You define a window with a `CWINDOW` statement.

(ii) You can define the window to be larger than, the same size as, or smaller than the actual range of data values, depending on whether you want to show all of the data or only part of the data.

viewport:

(i) A viewport defined in normalized coordinates, as a rectangular area on the display device where the image of the data appears.

(ii) You can have your graph take up the entire display device or show it in only a portion, say the upper right part.