(B) Given transfer function is $\frac{K(S+3)}{(S+1)(S+2)}$

Poles for Given transfer function:

$S+1=0$ and $S+2=0$ } Hence $\boxed{P=2}$

$\Rightarrow \boxed{S=-1}$ and $\boxed{S=-2}$

and zeroes for Given transfer function:

$S+3=0 \Rightarrow \boxed{S=-3}$ ← zero of given transfer function.

$\Downarrow$

$\boxed{Z=1}$

Centroid $= \frac{(-1-2)-(-3)}{2-1} = \frac{-3+3}{1} = 0$

Angle which asymptotes make with real axis $=$

$$\frac{(2q+1)}{2-1} \times 180^\circ \quad (q \text{ can be } 0, 1, \cdots)$$

here $q=0$ because only one angle less than 360°,

Angle of Asymptote $= 180^\circ$.

for Breakaway and Break in points, let us take Characteristic Equation,

ie, $1 + \frac{K(S+3)}{(S+1)(S+2)} = 0$

$\Rightarrow (S+1)(S+2) + K(S+3) = 0$

$\Rightarrow S^2 + 3S + 2 + KS + 3K = 0$

$\Rightarrow K = \frac{-(S+1)(S+2)}{(S+3)} \rightarrow \frac{dK}{dS} = 0$

$-\frac{(S+3)(2S+3) + (S+1)(S+2)}{(S+3)^2} = 0$

$\Rightarrow (s+3)(2s+3) = (s+1)(s+2)$

$\Rightarrow 2s^2+9s+9 = s^2+3s+2$

$\Rightarrow \boxed{s^2+6s+7=0}$ → Roots are

↳ two roots of given Equation are -1.58579 and -4.41421

There is no angle of departure (or) angle of arrival due to absence of complex zeroes (or) complex poles.

If we try to draw the root locus,