CHAPTER IV

CONCLUSIONS

Herein, The buckling of polar orthotropic annular plates subjected to different ratios of uniform in-plane radial edge pressures, $P_i / P_o = 0.0$, 0.5, and 1.0, has been analyzed for various combinations of clamped and simply supported conditions, those are

	inner edge	outer edge
case 1:	clamped	clamped
case 2:	simply supported	clamped
case 3:	clamped	simply supported
case 4:	simply supported	simply supported

and also various rigidity ratios, k, of 0.3, 1.0, 2.0, 4.0, and 6.0. The Galerkin's method has been employed in the analysis. Simple polynomials of eight order has been used for the deflection function. The critical buckling loads have been found in the form of non-dimensional parameter, λ, as the radius ratio, a/b, varies at each pressure ratio and rigidity ratio. The whole analysis has kept the Poisson's ratio fixed at 0.3.

The results have shown that most of the buckling modes are non-symmetric. The plate with bigger radius ratio and larger flexural rigidity in tangential direction can bear larger load. It is recommended that the research should be extended to find the buckling load at higher pressure ratios and other types of boundary conditions and perform the experiments to verify the accuracy of the theoretical results.