This thesis deals with "Oscillatory properties of solutions of certain class of second order nonlinear difference equations". It contains six chapters. Chapter 1 gives necessary introduction and motivation. In Chapters 2 and 3, we have obtained sufficient and necessary conditions for the oscillation of solutions of the following difference equations

\[ \Delta(a_n \Delta y_n) + \phi(n, y_n, \Delta y_n) + q_n f(y_{n+1}) = 0 , \quad n \in \mathbb{N}_0 \]

and

\[ \Delta^2 y_{n-1} + q_n y_{\sigma(n)}^\gamma = e_n , \quad n \in \mathbb{N} \]

respectively.

Chapters 4 and 5 deal with the oscillatory properties of second order quasilinear difference equations of the forms

\[ \Delta(a_{n-1} \Delta y_{n-1})^{\alpha-1} \Delta y_{n-1} + q_n f(y_n) = 0 , \quad n \in \mathbb{N} \]

\[ \Delta(a_{n-1} \Delta y_{n-1})^{\alpha-1} \Delta y_{n-1} + q_n f(y_{n-1}) = 0 , \quad n \in \mathbb{N} \]

and

\[ \Delta(a_{n-1} \Delta y_{n-1})^{\alpha-1} \Delta y_{n-1} + F(n, y_n) = G(n, y_n, \Delta y_n) , \quad n \in \mathbb{N}(n_0) , \]

respectively.

Finally, in Chapter 6, we obtain criteria for the oscillation of all / bounded solutions of the neutral type second order difference equations.

Examples are given throughout the thesis, wherever necessary, to illustrate the results.