

Contents

Preface	1
1 Preliminaries	4
1.1 Introduction	4
1.2 Oscillation of nonlinear difference equations	6
1.3 Oscillatory and asymptotic behaviour of solutions	14
1.4 On the stability of solutions of nonlinear difference equations	18
1.5 Lyapunov's direct method	20
2 Oscillatory and asymptotic behaviour of solutions of non-linear difference equations	25
2.1 Introduction	25
2.2 Oscillation of certain second order nonlinear difference equations	26
2.3 Nonoscillatory behaviour of solutions	37
3 Stability of nonlinear systems of difference equations	53
3.1 Introduction	53
3.2 l_p -stability	54
3.3 Lipschitz stability	69
3.4 Total Lipschitz stability	76
References	82
Arabic Summary	