Table 1.1: Relative Scrutiny of the Various Routing Techniques in WSNs (Raghunandan and Lakshmi 2011) 19

Table 1.2: Performance of Various Hierarchical Protocols (Liu 2012) 28

Table 2.1: LEACH Variants 44

Table 2.2: HEED Variants 46

Table 2.3: Unequal Clustering Techniques 48

Table 3.1: Radio Model Characteristics (Heinzelman et al. 2000) 65

Table 3.2: Simulation Parameters for Modified LEACH Protocol 69

Table 3.3: Performance Comparison of LEACH and Modified LEACH (A=120m × 120m) 80

Table 3.4: Performance Comparison of LEACH and Modified LEACH (A=300m×300m) 81

Table 3.5: Performance Comparison of LEACH and Modified LEACH (A=600m×600m) 82

Table 4.1: Simulation Parameters for Mobile Sink Assisted LEACH Protocol 95

Table 4.2: Performance Comparison of LEACH and Modified MSA LEACH (120m ×120m) 104

Table 4.3: Performance Comparison of LEACH and Modified MSA LEACH (300 m×300m) 105

Table 4.4: Performance Comparison of LEACH and Modified Mobile Sink Assisted LEACH (600m×600m) 106

Table 5.1: Simulation Parameters for Modified HEED Protocol 117

Table 5.2: Performance Comparison of HEED, U-HEED and Modified (A=120 X120) 129
Table 6.1: Performance Comparison of LEACH and Modified LEACH (A=100m × 100m) 135

Table 6.2: Performance Comparison of Modified Mobile Sink Assisted LEACH based on Number of Live Nodes (A=100m×100m) 137

Table 6.3: Performance Comparison of Modified HEED based on number of live nodes (A=100m×100m) 138

Table 6.4: Modifications Introduced in the Proposed Protocols 141