LIST OF TABLES

- Table 1.1 Composition of the Dry Atmosphere
- Table 1.2 SO₂ concentration in some big cities of India.
- Table 1.3 Vehicle types and emissions for various engine / fuel combinations.
- Table 1.4 Comparative emissions from petrol and diesel engines.
- Table 2.1 Gives The Land Use Pattern Of Kolhapur City.
- Table 2.2 Analytical Details of the four Parameters
- Table 2.3 List of Ambient Air Sampling and Analysis Instruments
- Table 3.1 Total Number of Registered Motor Vehicles (in Thousands) in India (1951–2002)
- Table 3.2 Sectoral contribution to emissions in Delhi (tones/day)
- Table 3.3 Range of annual averages of SPM in major Indian cities.
- Table 3.4 Monthly Average Meteorological data for study period (Sep-06 Aug-07)
- Table 3.5 National Ambient Air Quality Standards, CPCB (2003)
- Table 3.6 Monthly average, maximum and minimum values of the four parameters at Site 1.(Shivaji University Campus) from September 2006 to August 2007.
- Table 3.7 Monthly average, maximum and minimum values for the four parameters at Site 2 (Dabholkar corner) from September 2006 to August 2007.
- Table 3.8 Monthly average, maximum and minimum values for the four parameters at Site 3(Mahadwar Road) from September 2006 to August 2007.
- Table 3.9 Annual standards for Residential area (CPCB, 2003) and monthly Average, Maximum and Minimum values recorded for the four air pollutants at the three study sites in Kolhapur during September 2006 to August 2007

- Table 3.10 Indian Air Quality Index (AQI) for different Pollutants
- Table 3.11 AQI status of Site 1, 2 and 3 for the four parameters
- Table 3.12 T-Test values of Sum, Std. Deviation, T Calculated, T table for Site 1
- Table 3.13 T-Test values of Sum, Std. Deviation, T Calculated, T table for Site 2
- Table 3.14 T-Test values of Sum, Std. Deviation, T Calculated, T table at Site 3
- Table 4.1 Ward Wise Parking Zones in Kolhapur
- Table 4.2 Number of Vehicles per hour on Different Roads in Kolhapur City
- Table 4.3 Accident Record of Kolhapur District.
- Table 4.4 Growth of Auto Vehicles in Kolhapur City in Ten Years (1994 To 2005)
- Table 4.5 Increase in Kolhapur RTO Income from Vehicle Registration during 1987 to 2007
- Table 4.6 Projection of the Old, Present and Future Traffic coming from all the seven checkpoints to the City per day
- Table 4.7 Exhaust Values for CO% and HC ppm of Two Wheelers

 Manufactured in 1981 to 1990
- Table 4.8 Exhaust Values for CO% and HC ppm of Two Wheelers

 Manufactured in 1991 to 2000
- Table 4.9 Exhaust Values for CO% and HC ppm of Two Wheelers

 Manufactured in 2001 to 2007.
- Table 4.10 Vintage Wise Trend of CO % Emission of Two Wheeler Vehicles from 1981 To 2007
- Table 4.11 Vintage Wise Trend of HC ppm Emission of Two Wheeler Vehicles from 1981 to 2007

- Table 4.12 Increasing Trend of Vehicles in Last Twenty Years in Kolhapur

 District
- Table 4.13 Exhaust emission values for CO and HC for the same vehicle recorded from the PUC centres in Kolhapur city

LIST OF FIGURES

- Figure 3.1 Monthly average, maximum and minimum values of SO₂ for Site 1 (Shivaji University) from September 2006 to August 2007.
- Figure 3.2 Monthly average, maximum and minimum values of SO₂ for Site 2 (Dabholkar corner) from September 2006 to August 2007.
- Figure 3.3 Monthly average, maximum and minimum values of SO₂ for Site 3 (Mahadwar road) from September 2006 to August 2007.
- Figure 3.4 Monthly average, maximum and minimum values of NO_X for Site 1 (Shivaji University) from September 2006 to August 2007.
- Figure 3.5 Monthly average, maximum and minimum values of NO_X for Site 2 (Dabholkar corner) from September 2006 to August 2007.
- Figure 3.6 Monthly average, maximum and minimum values of NO_X for Site 3 (Mahadwar road) from September 2006 to August 2007.
- Figure 3.7 Monthly average, maximum and minimum values of RSPM for Site 1 (Shivaji University) from September 2006 to August 2007.
- Figure 3.8 Monthly average, maximum and minimum values of RSPM for Site 2 (Dabholkar corner) from September 2006 to August 2007.
- Figure 3.9 Monthly average, maximum and minimum values of RSPM for Site 3 (Mahadwar road) from September 2006 to August 2007.
- Figure 3.10 Monthly average, maximum and minimum values of SPM for Site 1 (Shivaji University) from September 2006 to August 2007.
- Figure 3.11 Monthly average, maximum and minimum values of SPM for Site 2 (Dabholkar corner) from September 2006 to August 2007.
- Figure 3.12 Monthly average, maximum and minimum values of SPM for Site 3 (Mahadwar road) from September 2006 to August 2007.

- Figure 4.1 Vintage wise trend of CO% from two wheelers in Kolhapur (1981 to 2007).
- Figure 4.2 Vintage wise trend of HC ppm from two wheelers in Kolhapur (1981 to 2007).
- Figure 4.3 Vintage wise trend of average exhaust CO % for two wheelers.
- Figure 4.4 Vintage wise trend of average exhaust HC ppm for two wheelers
- Figure 4.5 Increasing number of vehicles in Kolhapur District in last twenty years (1987-2007)

LIST OF PLATES

- Plate I a) Respirable Dust Sampler (RDS)
 - b) High Volume Sampler (HVS)
 - c) Auto Exhaust Analyser (AEA)
 - d) UV- Visible Spectrophotometer
- Plate II a) Site 1: Shivaji University
 - b) Site 2: Dabholkar Corner
 - c) Site 3: Mahadwar Road
 - d) Testing of two wheeler exhaust with AEA
- Plate III a) Inadequate car parking, a common problem in Kolhapur.
 - b) Two wheeler parking at road junction reducing road width
 - c) Traffic congestion on narrow roads causing severe air pollution
 - d) Unruly two wheeler traffic at road junction
- Plate IV a) Idling of vehicles at road signals adds to air pollution
 - b) Air pollution due to exhaust emission a common sight in city
 - c) Buses and heavy vehicles contribute to air pollution levels in city
 - d) Narrowing of roads and bad roads add to the problem of air pollution

Map-I

Study Sites in Kolhapur City