

LIST OF TABLES

		<u>Page</u>
1.1	Table showing the distance of various gauge observations in Teesta basin from the forecasting stations and their travel time.	.. .. 25
2.5.1	Gradually increasing complexity of polynomials of five variables.	.. .. 79
3.3.1	Hourly gauge reading from 4.00 hours on the 23rd July, 1979 to 15.00 hours on the 25th July, 1979 at Coronation Bridge, Teesta Bazar, Rangpo (Teesta), Great Rangeet (Singla Bazar) and Sankalan respectively.	.. .. 115
3.3.2	Transformed hourly gauge readings from 4.00 hours on the 23rd July, 1979 to 15.00 hours on the 25th July, 1979 at Coronation Bridge, Teesta Bazar, Rangpo (Teesta), Great Rangeet (Singla Bazar) and Sankalan respectively.	.. .. 118
3.3.3	Correlation co-efficient of hourly flows at Coronation Bridge Point with flows at different gauging station for 10 shift of time intervals.	.. .. 121
3.3.4	Output Input variables for application of Group Method of Data Handling Algorithms.	.. .. 122
3.3.5	Integral square error for different combinations in different layers.	.. .. 125
3.3.6	Observed and modelled values of rationalised flow at Coronation Bridge Point.	.. .. 126
3.4.1	Hourly gauge reading from 16.00 hours on the 22nd July, 1979 to 15.00 hours on the 25th July, 1979 at Domohani Road Bridge, Coronation Bridge, Teesta Bazar, Rangpo (Teesta), Great Rangeet (Singla Bazar) and Sankalan.	.. .. 129

3.4.2	Hourly gauge reading from 16.00 hours on 22nd July, 1979 to 16.00 hours on 25th July, 1979 at Domohani Road Bridge, Coronation Bridge, Teesta Bazar, Rongpo (Teesta), Great Rangeet (Singla Bazar) and Sankalan in Rationalised Unit.	.. ..	132
3.4.3	Correlation co-efficient of hourly flows at Domohani Bridge Point with flows at different gauging station for 11 time shifts.	.. ..	135
3.4.4	Output Input variables for application of Group Method of Data Handling Algorithms	.. ..	136
3.4.5	Integral square error for different combinations in different layers	.. ..	138
3.4.6	Observed and Modelled values of rationalised flow at Domohani Bridge Point	.. ..	139
3.5.1	Sixth hourly flow data at Coronation Bridge and Sankalan and sixth hourly integrated rainfall at Teesta Bazar, Singla Bazar, Pedong and Kantitar from 2.30 hours on 20th July, 1979 to 20.30 hours on 31st July, 1979.	.. ..	141
3.5.2	Transformed sixth hourly gauge reading from 2.30 hours on 20th July, 1979 to 20.30 hours on 31st July, 1979 at Coronation Bridge, Sankalan and Sixth hourly integrated rainfall at Teesta Bazar, Singla Bazar, Pedong and Kantitar in Rationalised Units.	.. ..	143
3.5.3	Correlation co-efficients of sixth hourly flows at Coronation Bridge Point and Sankalan with sixth hourly rainfall at Teesta Bazar, Singla Bazar, Pedong and Kantitar gauging stations for 11 shift of time intervals	.. ..	145
3.5.4	Output Input variables for application of Group Method of Data Handling Algorithms	.. ..	146
3.5.5	Integral square error for different combinations in different layers	.. ..	149
3.5.6	Observed and modelled values of Rationalised Flow at Coronation Bridge Point	.. ..	150

4.2.1	Gradually increasing complexity of polynomials of five variables	.. ..	167
4.3.1	Hourly gauge reading from 16.00 hours on the 22nd July, 1979 to 15.00 hours on the 25th July, 1979 at Domohani Road Bridge, Coronation Bridge, Teesta Bazar, Rongpo (Teesta), Great Rangeet (Singla Bazar) and Sankalan	.. ..	168
4.3.2	Hourly gauge reading from 16.00 hours on 22nd July, 1979, to 15.00 hours on 25th July, 1979 at Domohani Road Bridge, Coronation Bridge, Teesta Bazar, Rongpo (Teesta), Great Rangeet (Singla Bazar) and Sankalan in Rationalised Units	.. ..	172
4.3.3	Correlation co-efficient of hourly flows at Domohani Bridge Point with flows at different gauging stations for 11 time shifts	.. ..	176
4.3.4	Output Input variables for application of Group Method of Data Handling Algorithms	.. ..	177
4.3.5	Observed and Modelled values of rationalised flow at Domohani Bridge Point	.. ..	180
5.6.1	Hourly gauge reading from 16.00 hours on the 22nd July, 1979 to 15.00 hours on the 25th July, 1979 at Domohani Road Bridge, Coronation Bridge, Teesta Bazar, Rongpo (Teesta), Great Rangeet (Singla Bazar) and Sankalan	.. ..	197
5.6.2	Correlation co-efficient of hourly flows at Domohani Bridge Point with flows at different gauging stations for 11 time shifts	.. ..	201
5.6.3	Output Input variables for application of Recursive Analysis	.. ..	202
5.6.4	Observed and Modelled values using least square technique, flows of the river Teesta at Domohani Road Bridge from 16.00 hours on 23.7.79 to 15.00 hours on 25.7.79 in rationalised units	.. ..	205

	<u>Page</u>
5.6.5 Observed and modelled values using recursive least square technique of hourly flows of the river Teesta at Domohani Road Bridge from 18.00 hours from 23.7.1979 to 15.00 hours on 25.7.1979 in rationalised units	.. .. 207
5.6.6 Values of the Parameter vector α for initialisation of Recursive Instrument variable Algorithms for prehistory interval $n = 2$ and deterministic inputs $m = 5$	.. .. 209
5.6.7 Values of the P-matrix for initialisation of the Recursive Instrument Variable Algorithms for Pre-history interval $n = 2$ and deterministic inputs $m = 5$	.. .. 210
5.6.8 Observed and Modelled values using recursive instrument variable algorithms of hourly flow at Domohani Road Bridge of the River Teesta from 21 hours on 23.7.79 to 15 hours on 25.7.79 in rationalised units	.. .. 211
6.5.1 Daily average discharge of the river Teesta in $M^3/Sec.$ at Domohani Road Bridge (Jalpaiguri) from the 1st January, 1974 to the 31st December, 1979	.. .. 229
6.5.2 Power density spectra versus cycle per day of the daily average discharge of the river Teesta at the Domohani Road Bridge (Jalpaiguri) for the period from the 1st January, 1975 to the 31st December, 1979	.. .. 246
6.5.3 Correlation Versus Shift of instances of time in days of the daily flow sequence of the river Teesta at Domohani Road Bridge	.. .. 247
6.5.4 Observed flows and the error of prediction of flows for the period from 3.1.1979 to 10.4.1979	.. .. 248
6.5.5 Observed flows and the error of prediction of flows for the period from 2.7.1975 to 30.8.1975	.. .. 253
6.5.6 Observed flows and the error of prediction of flows for the period from 2.1.1973 to 31.12.1973	.. .. 256