



TABLE OF CONTENT

CERTIFICATE.....	I
ACKNOWLEDGEMENT.....	III
TABLE OF CONTENT.....	VI
LIST OF FIGURES.....	IX
LIST OF TABLES.....	XII
LIST OF PLATES.....	XIII
CHAPTER 1: INTRODUCTION.....	1
1.1 RATIONALE AND BACKGROUND	2
1.2 DEFINING STUDY AREA	3
1.3 REGIONAL STRUCTURE AND TECTONICS.....	4
1.4 HISTORICAL AND MODERN RECORDS OF HYDROLOGY OF LOWER NARMADA.....	6
1.4.1 Historical Records.....	6
1.4.2 Modern Records.....	8
1.5 SCOPE AND OBJECTIVES	11
1.5.1 Methodology	12
1.5.2 Earlier Approaches and Results	13
CHAPTER 2: GEOMORPHOLOGY.....	18
2.1 REGIONAL GEOMORPHOLOGY.....	19
2.1.1 Higher Erosional Surfaces	19
2.1.2 Lower Erosional Surfaces	20
2.1.3 Alluvial Plains.....	21
2.2 GEOMORPHOLOGY OF THE STUDY AREA.....	21
2.2.1 Quaternary Surface 1	22
2.2.2 Quaternary Surface 2	24
2.2.3 Quaternary Surface 3.....	25
CHAPTER 3: MICRO-SEISMIC STUDIES	28
3.1 SEISMIC STUDIES: A THEORETICAL BACKGROUND	29
3.1.1 Field Observations and Methodology.....	32
3.1.2 Theoretical Calculation	34
3.1.3 Results and Discussion.....	39
3.2 CONCLUSION.....	43
CHAPTER 4: HIGH RESOLUTION STUDIES: SAMPLING AND CHRONOLOGY ...	44

4.1	INTRODUCTION	45
4.2	HIERARCHY OF SAMPLE LOCATION	45
4.3	SAMPLING FOR MULTI-PROXY ANALYSIS	48
4.4	SAMPLING FOR OSL DATING.....	49
4.4.1	General Principles of Luminescence Dating	50
4.4.2	Result.....	51
CHAPTER 5:	HIGH RESOLUTION SEDIMENTOLOGICAL STUDIES	54
5.1	INTRODUCTION	55
5.2	METHODOLOGY	56
5.3	SEDIMENT FACIES	58
5.3.1	Sandy Facies	59
5.3.2	Muddy Facies	61
5.4	PALAEHYDROLOGY	63
5.5	BIVARIATE PLOTS	63
5.6	OTHER PLOTS.....	65
5.7	DISCUSSION.....	68
5.8	INFERENCES	70
CHAPTER 6:	MICROPALÆONTOLOGICAL STUDIES.....	71
6.1	INTRODUCTION	72
6.2	MATERIALS AND METHODS.....	73
6.3	RESULTS: FORAMINIFERAL ASSEMBLAGE AND THEIR DESCRIPTION	73
6.4	DISCUSSION.....	90
6.5	INFERENCES	93
CHAPTER 7:	ENVIRONMENTAL MAGNETISM AND GEOCHEMICAL STUDIES .	94
7.1	ENVIRONMENTAL MAGNETIC STUDIES.....	95
7.1.1	Sample and Analysis	95
7.1.2	Sample Preparation for Magnetic Studies.....	96
7.1.3	Environmental Magnetic Measurement	96
7.1.3.1	<i>Calculation of Mass Specific Susceptibility.....</i>	98
7.1.3.2	<i>Calculation of Frequency Dependent Susceptibility.....</i>	98
7.1.4	Ferrimagnetic Mineral Concentration.....	99
7.1.5	Results and Discussion.....	99
7.2	GEOCHEMICAL STUDIES	106
7.2.1	Methodology	107
7.2.2	Results and Discussion.....	108
7.3	INFERENCES	115

CHAPTER 8: AGGRADATION HISTORY AND DEPOSITIONAL MODEL FOR UCHEDIYA SURFACE.....	116
8.1 INTEGRATION OF MULTI-PROXY RECORDS.....	117
8.2 DEPOSITIONAL ENVIRONMENT.....	122
8.2.1 Channel Deposit	122
8.2.2 Channel Margin Deposits.....	123
8.2.3 Transitional Deposits	123
8.2.4 Overbank Deposit	124
8.2.5 Catastrophic Monsoonal Storm with Coastal Upwelling Deposits.....	124
8.3 MODEL FOR AGGRADATION HISTORY OF LATE HOLOCENE FLOOD PLAIN.....	125
REFERENCES.....	131
PUBLICATIONS.....	158