

1	TOWN PLANNING AND HISTORY OF TOWN PLANNING ACTS	9
1.1	GENERAL:	9
1.2	POST-INDEPENDENCE LEGACY: MARGINALIZATION OF URBAN LOCAL BODIES	9
1.3	THE 74TH CONSTITUTIONAL AMENDMENT: A NEW DAWN (1992–93).....	9
1.1	OBJECTS OF TOWN PLANNING:	11
1.1.1	<i>Beauty:</i>	11
1.1.2	<i>Convenience:</i>	11
1.1.3	<i>Environment:</i>	11
1.1.4	<i>Health:</i>	11
1.2	PRINCIPLES OF TOWN PLANNING:	12
1.3	NECESSITY OF TOWN PLANNING:	13
1.4	UNHEALTHY LIVING CONDITIONS, ETC.	13
1.4	ORIGIN OF TOWNS:	14
1.5	GROWTH OF TOWNS:	14
1.6	TYPES OF GROWTH:	15
1.6.1	<i>Growth according to origin:</i>	15
1.6.2	<i>Growth according to direction:</i>	18
1.7	DEVELOPMENT OF TOWNS:	19
1.8	DISTRIBUTION OF LAND USE:	20
1.9	TYPES OF TOWN PLANNING:	20
1.10	SITE FOR AN IDEAL TOWN.....	22
1.11	REQUIREMENTS OF NEW TOWNS:	23
1.11.1	<i>Function of the town:</i>	23
1.11.2	<i>Welfare of the people:</i>	23
1.12	GENERAL REQUIREMENTS:	23
2	PLANNING THEORIES	24
2.1	SIR EBENEZER HOWARD	24
2.1.1	<i>About Ebenezer Howard...</i>	24
2.1.2	<i>The 'Three Magnets' theory...</i>	24
2.1.3	<i>The 'Garden City' concept...</i>	25
2.2	LETCWORTH GARDEN CITY... ..	26
2.3	WELWYN GARDEN CITY.....	27
2.4	SIR RAYMOND UNWIN... ..	27
2.4.1	<i>Satellite town characteristics...</i>	27
2.5	SIR PATRICK GEDDES LIFE AND WORK.....	28
2.5.1	<i>Father of Town Planning</i>	28
2.6	CLARENCE PERRY NEIGHBOURHOOD CONCEPT.....	31
2.6.1	<i>Introduction</i>	31
2.6.2	<i>Principles of Planning</i>	31
2.7	CONCENTRIC ZONE THEORY	32
2.8	SECTOR THEORY.....	33
2.9	MULTIPLE-NUCLEI THEORY	33
2.10	LEWIS MUMFORD	34
2.11	C.A.DOXIADIS	35
3	TOWN PLANNING IN ANCIENT INDIA:-.....	37
3.1	TOWN PLANNING SYSTEM OF INDUS VALLEY CIVILIZATION (HARAPPAN CIVILIZATION):-	37
3.1.1	<i>Main Features Of Town Planning In Indus Valley Civilisation:-</i>	37

3.1.2	Development Of Cities:-	37
3.1.3	Town Planning In Mohenjo-Daro :-	37
	In Mohenjo-Daro, Settlement Divisions Were As Follows :-	38
3.1.4	CONSTRUCTION TECHNIQUES IN MOHENJO-DARO:-	38
	Mohenjo-Daro - Great Bath :-	38
3.1.5	Mohenjo-Daro : Granary :-	38
3.1.6	Town Planning In Harappa :-	38
3.1.7	Harappa's Drainage System :-	39
3.2	TOWN PLANNING IN MEDIEVAL PERIOD:-	40
3.3	PLANNING HIERARCHY IN INDIA:	40
3.4	OVERALL HISTORY OF TOWN PLANNING:	41
3.4.1	Cities and Their Planners.....	43
3.5	SHILPA SHASTRA	44
3.5.1	Dandaka	44
3.5.2	Sarvatobhadra	45
3.5.3	Nandyavarta	45
3.5.4	Padmaka(Lotus Petals)	46
3.5.5	Swastika	46
3.5.6	Prastara.....	47
3.6	MODERN CITIES IN INDIA	48
3.6.1	Edwin Lutyens- Delhi	48
3.7	CHANDIGARH CITY.....	51
3.7.1	First Plan by Albert Mayor	51
3.7.2	Le Corbusier.....	52
3.8	JAIPUR	53
4	ECONOMICS AND SOCIOLOGY	55
4.1	INTRODUCTION TO URBAN SOCIOLOGY	55
4.1.1	OBJECTIVES OF URBAN SOCIOLOGY.....	55
4.1.2	URBAN SOCIOLOGY.....	55
4.1.3	Scope:.....	55
4.1.4	DEFINITIONS OF URBAN SOCIOLOGY.....	56
4.2	URBAN AGGLOMERATION	56
4.2.1	Meaning	56
5.1.1	Characteristics of Urban Agglomeration	56
5.1.2	Urban–Rural Differences (Sorokin and Zimmerman).....	57
6	METROPOLITAN REGIONAL PLANNING.....	57
6.1	CLASSIFICATION OF URBAN SETTLEMENTS	61
6.1.1	1. Statutory Towns.....	61
6.1.2	URDPFI Classification of Urban Settlements.....	61
6.1.3	Urban Planning Approach.....	62
6.2	PLANNING SYSTEM FRAMEWORK	63
6.3	WHAT IS REGION?	65
6.3.1	Types of Regions:	65
6.4	WHAT IS REGIONAL PLANNING: -	66
6.4.1	Concept of Regional Planning:	66
6.4.2	Object & Need of Regional Planning:.....	66
6.4.3	Settlement Hierarchy:	67
6.4.4	Types of Regions (Classification of Regions).....	67

6.4.5	Formal regions:	69
6.4.6	Functional region:	70
6.5	CONTENTS OF REGIONAL PLAN:	70
6.6	SURVEYS OF REGIONS	71
6.6.1	Geography of the Region	71
6.6.2	Population projection:.....	72
6.6.3	Settlement pattern.....	72
6.6.4	Transportation	72
6.6.5	Physical and Socio Economic linkages	72
6.7	SWOT ANALYSIS	75
6.8	PROPOSALS OF REGIONAL PLAN:	75
6.8.1	Metropolitan Planning Region	75
6.8.2	Approach of Plan Preparation.....	76
6.8.3	Aspects of Investment Region Planning.....	76
6.8.4	Criteria for Delineation of Region	77
6.8.5	Techniques for Delineation	78
6.9	LAND USE CLASSIFICATION FOR REGIONAL PLANNING	78
6.9.1	1. Urbanisable Zone (U Zone).....	78
6.9.2	2. Industrial Zone (I Zone)	79
6.9.3	3. Transport and Communication Zone (T Zone)	79
6.9.4	4. Primary Activity Zone (PA Zone).....	79
6.9.5	5. Open Area Zone (O Zone).....	80
6.9.6	6. Protective and Eco Sensitive Zone (E Zone).....	80
6.9.7	7. Special Area Zone (S Zone)	80
7	URBAN INFRASTRUCTURE SERVICES AND AMENITIES	82
7.1	WHY SET OF STANDARDS FOR PLANNING?	82
7.2	OBJECTIVE	82
7.3	PRIMITIVE DEVELOPMENT OF HUMAN SETTLEMENT.....	82
7.3.1	Settlement Followed By the Need Of The People	83
7.4	TOWNS EVOLVED OUT OF ASPIRATION OF THE PEOPLE	83
7.5	GROWTH OF PLANNING IN MODERN INDIA.....	84
7.6	GROWTH OF PLANNING ACROSS THE GLOBE (IN DEVELOPED COUNTRIES)	84
7.7	NEED OF BALANCED APPROACH	84
7.8	CHALLENGE BEFORE CITY PLANNERS.....	85
7.9	THE PREVAILING NORMS AND STANDARDS.....	85
7.9.1	GLOBAL GOALS AND PRACTICES	85
7.9.2	Global Goals.....	85
7.9.3	National and State Standards.....	86
7.10	WATER SUPPLY	86
7.10.1	Fire Fighting Demand.....	87
7.10.2	Institutional Water Demand	87
7.10.3	Industrial Units Water Demand	87
7.10.4	Station Water Requirements	88
7.11	SEWERAGE & SANITATION.....	88
7.12	SOLID WASTE MANAGEMENT: KEY POINTS	89
7.13	SOCIAL INFRASTRUCTURE: ENHANCING QUALITY OF LIFE.....	89
7.13.1	Provision of Infrastructure	90
7.13.2	Specific Infrastructure Norms	90

8	FUNDAMENTALS OF MANAGEMENT	95
8.1	INTRODUCTION	95
8.2	OBJECTIVES OF PROJECT	95
8.2.1	PHASES OF PROJECT MANAGEMENT	95
8.2.2	Project Planning	95
8.2.3	2. Project Scheduling —	96
8.3	TECHNIQUES OF PROJECT MANAGEMENT	97
8.3.1	1. Bar charts and Milestone charts —	97
8.3.2	2. Network Methods —	98
8.3.3	BAR CHARTS	98
8.3.4	MILESTONE CHARTS	100
8.4	ELEMENTS OF NETWORK DIAGRAM	100
8.4.1	Event	100
8.4.2		100
8.4.3	ELEMENTS OF NETWORK DIAGRAM	101
8.5	PATH & NETWORK	102
8.6	ERRORS IN NETWORK LOGIC	102
8.7	CLASSIFICATION OF ACTIVITIES	103
8.8	GUIDELINES FOR NETWORK CONSTRUCTION	103
8.9	MODES OF NETWORK CONSTRUCTION	104
8.10	WORK BREAKDOWN STRUCTURE	104
8.11	PERT (PROGRAMME EVALUATION REVIEW TECHNIQUE)	104
8.12	CPM (CRITICAL PATH METHOD)	107
8.13	CRITICAL PATH	109
9	URBAN AND REGIONAL GOVERNANCE	110
9.1	URBAN GOVERNANCE: CONCEPT AND NEED	110
9.2	CORE ELEMENTS OF URBAN GOVERNANCE	110
9.3	URBAN LOCAL BODIES AND MUNICIPAL GOVERNANCE IN INDIA	110
9.4	TYPES OF URBAN LOCAL BODIES	110
10	RISKS, DISASTER MITIGATION AND MANAGEMENT	112
10.1	INTRODUCTION	112
10.2	FACTORS AFFECTING CLIMATE CHANGE	112
10.2.1	Natural Factors	112
10.2.2	Anthropogenic (Human Caused) Factors	113
10.3	EVIDENCES OF CHANGE IN CLIMATE SYSTEM	114
10.4	IMPACTS OF CLIMATE CHANGE	114
10.4.1	Higher Temperature	114
10.4.2	Changing Landscapes	114
10.4.3	Wild Life / Eco system	114
10.4.4	Rising Sea Levels	115
10.4.5	Drought, Fire & Floods	115
10.4.6	Storms	115
10.4.7	Illness & Disease	115
10.4.8	Economic Losses	116
10.4.9	Agriculture Productivity	116
10.5	INTERNATIONAL EFFORTS TO COUNTER CLIMATE CHANGE	117
10.5.1	The Intergovernmental Panel on Climate Change (IPCC)	117
10.5.2	United Nations Framework Convention on Climate Change (UNFCCC)	117

10.5.3	KYOTO Protocol	117
10.6	ENVIRONMENT IMPACT ASSESSMENT	118
10.6.1	Introduction	118
10.6.2	History of EIA in India	118
10.6.3	Process of EIA	118
10.6.4	Features of 2006 Amendments	120
10.6.5	Importance of EIA	121
10.7	ECO-SENSITIVE ZONES	121
10.7.1	What are Eco-Sensitive Zones (ESZs)?	121
10.7.2	Activities in ESZs:	122
10.7.3	Significance of ESZs:	122
10.7.4	Eco sensitive zones in India:	122
11	PUBLIC POLICY AND POLITICS	123
11.1	CORE DEFINITION AND ORIGINS	123
11.2	KEY PRINCIPLES OF THE THEORY	123
11.3	CASE STUDIES	123
11.4	URBAN PLANNERS VS POLITICIANS	124
11.5	POLITICAL INTERFERENCE IN URBAN PLANNING	124
12	PLANNING PROCESS	125
12.1	SCOPE AND PURPOSE OF VARIOUS PLANS	125
12.1.1	<i>Perspective Plan</i>	125
12.1.2	<i>Regional Plan</i>	125
12.1.3	<i>Development Plan</i>	125
12.1.4	<i>Master Plan to be referred as Development Plan</i>	126
12.1.5	<i>Local Area Plan</i>	126
12.1.6	<i>Special Purpose Plan</i>	127
12.1.7	<i>Annual Plan</i>	127
12.1.8	<i>Inter-relationship among various plans</i>	127
12.2	CONTENTS OF PLANS	128
12.2.1	<i>Perspective Plan</i>	128
12.2.2	<i>Contents of Regional Plan</i>	129
12.2.3	<i>Contents of Development Plan</i>	133
12.2.4	<i>Implementation Plan</i>	139
12.2.5	<i>Local Area Plan (Ward Plans)</i>	142
12.3	POPULATION FORECASTING METHODS:	142
12.3.1	<i>ARITHMETICAL INCREASE METHOD</i>	142
12.3.2	<i>GEOMETRICAL INCREASE METHOD (GEOMETRICAL PROGRESSION METHOD)</i>	142
12.3.3	<i>INCREMENTAL INCREASE METHOD</i>	143
12.3.4	<i>GRAPHICAL METHOD</i>	143
12.3.5	<i>COMPARATIVE GRAPHICAL METHOD</i>	143
12.3.6	<i>MASTER PLAN METHOD</i>	143
12.3.7	<i>LOGISTIC CURVE METHOD</i>	143
13	PLANNING TECHNIQUES	144
13.1	TYPES OF DATA	144
13.1.1	<i>Primary Survey Techniques</i>	144
13.2	SECONDARY DATA COLLECTION TECHNIQUES	144
13.2.1	<i>Definition</i>	144

13.2.2	A. Published Sources	145
13.2.3	B. Unpublished Sources	145
13.3	7.3 TYPES OF SURVEYS IN PLANNING	145
13.3.1	Socio-Economic Survey.....	145
13.3.2	Land Use / Land Utilization Survey	145
13.3.3	Density Surveys	146
13.3.4	Infrastructure Surveys.....	146
13.4	MAPPING	147
13.4.1	Scale of Map.....	147
14	URBAN AND REGIONAL PLANNING IN INDIA:.....	148
14.1	ECO SENSITIVE ZONE:	148
14.1.1	Activities Allowed in ESZs.....	148
14.1.2	Significance of ESZs	148
14.2	POLLUTER PAY PRINCIPAL	148
14.3	COSTAL REGULATION ZONE.....	150
14.3.1	Purpose of CRZ Regulation:.....	150
14.3.2	History of CRZ.....	151
14.3.3	Primary Classification of CRZ	152
15	DEVELOPMENT PLAN	158
15.1	WHAT IS DEVELOPMENT PLAN: -.....	158
15.2	WHAT IS THE IMPORTANCE OF A MASTER PLAN?	158
15.2.1	Objectives of Master Plan	158
15.3	GIS BASED LAND USE	159
	Preparation of GIS Base Map.....	159
	Need For GIS Based DP:	159
15.3.1	Use of GIS Based DP	159
15.4	PROCESS FLOW OF DP PREPARATION.....	162
15.4.1	Methodology.....	162
15.5	PREPARATION OF PROPOSED LAND USE PLAN.....	165
15.5.1	Population Projection.....	166
	Population Projection Methods	166
15.6	CLASSIFICATION OF TOWNS AS PER ACT.....	166
15.7	CLASSIFICATION OF TOWNS & CITIES (BY CENSUS OF INDIA).....	167
15.8	TYPES OF SURVEYS	167
15.8.1	Socio-Economic Survey.....	167
15.8.2	Land use/utilisation Surveys	167
15.8.3	Density Surveys	167
16	SPECIAL AREA PLAN	169
16.1	ECO-SENSITIVE AREAS	169
16.2	ZONAL PLANS, SECTOR PLANS	169
16.2.1	Contents of a Zonal Plan	170
16.2.2	Functions of a Zonal Plan	170
17	DISASTER MANAGEMENT.....	171
17.1	WHAT IS DISASTER?	171
17.2	VULNERABILITY	171
17.3	DISASTER MANAGEMENT IN INDIA.....	174

17.4	NATIONAL DISASTER MANAGEMENT ACT 2005.....	175
17.4.1	<i>National Disaster Management Authority</i>	175
17.5	NATIONAL DISASTER MANAGEMENT PLAN, 2016.....	176
17.5.1	<i>Hyogo Framework for Action</i>	176
17.5.2	<i>Objective of Disaster Management Act 2005.....</i>	177
17.5.3	<i>National Disaster Management Authority (NDMA)</i>	178
17.5.4	<i>State Disaster Management Authority:.....</i>	179
17.5.5	<i>District Disaster Management Authority:.....</i>	179
17.5.6	<i>Local Authority:.....</i>	179
17.6	NATIONAL INSTITUTE OF DISASTER MANAGEMENT	179
17.7	NATIONAL DISASTER RESPONSE FORCE:.....	180
17.8	NATIONAL DISASTER RESPONSE FUND.....	180
17.9	RESILIENT CITIES.....	180
17.10	INCIDENT RESPONSE SYSTEM	181
17.10.1	<i>IRS Organisation.....</i>	181
17.10.2	<i>Incident Response Teams.....</i>	182
17.10.3	<i>Organisational Flexibility</i>	183
17.10.4	<i>IRS Training</i>	183
17.10.5	<i>IRS Notification.....</i>	183
18	TOWN PLANNING SCHEME AND LAND POOLING TECHNIQUES.....	184
18.1	EVOLUTION OF CURRENT TOWN PLANNING SCHEME MECHANISM:	184
18.2	WHY T P SCHEME MECHANISM WORKS:	184
18.3	OTHER EXAMPLES OF LAND POOLING, READJUSTMENT AND RECONSTITUTION:	186
18.4	RAJASTHAN LAND POOLING SCHEME ACT 2016	187
19	GOVERNMENT SCHEMES AND MISSIONS.....	198
19.1	SMART CITY	198
19.2	ATAL MISSION FOR REJUVENATION AND URBAN TRANSFORMATION	201
19.2.1	<i>URBAN REFORMS AND CAPACITY BUILDING</i>	203
19.3	PRADHAN MANTRI AWAS YOJNA (PMAY)	203
19.3.1	<i>Definition:.....</i>	204
19.3.2	<i>Implementation Methodology:.....</i>	205
19.4	HERITAGE CITY DEVELOPMENT AND AUGMENTATION YOJANA (HRIDAY).....	207
20	URBANIZATION AND URBAN DEVELOPMENT.....	208
21	POLICIES IN INDIA	210
21.1	NATIONAL URBAN TRANSPORT POLICY 2014	210
21.1.1	<i>BACKGROUND</i>	210
21.1.2	<i>VISION</i>	210
21.1.3	<i>OBJECTIVES</i>	210
21.1.4	<i>NEED FOR A NATIONAL POLICY.....</i>	211
21.2	NATIONAL LAND UTILIZATION POLICY	213
21.2.1	<i>Goal.....</i>	213
21.2.2	<i>Objective:</i>	213
21.3	LAND UTILIZATION ZONES:.....	214
21.3.1	<i>Land-use Management Areas (LMAs).....</i>	214
21.3.2	<i>Implementation Approach</i>	214
21.4	NATIONAL HOUSING POLICY:.....	215
	<i>Housing Policies over the years.....</i>	215

<i>Urban Housing Scenario in India Urbanization</i>	215
21.4.1 <i>Strategy to Deal with Housing Shortage</i>	215
<i>Initiatives by Ministry of Housing & Urban Poverty Alleviation</i>	215
21.5 NATIONAL URBAN HOUSING AND HABITAT POLICY 2007	215
22 GIS, GPS AND REMOTE SENSING	217
22.1 GEOSPATIAL TECHNOLOGY	217
22.2 WHAT IS GIS?	217
22.2.1 <i>GIS Data Model/Types</i>	218
22.2.2 <i>Applications of GIS</i>	219
22.3 GLOBAL POSITIONING SYSTEM	239
22.3.1 <i>Introduction</i>	239
22.4 SPACE SEGMENTS.....	240
22.5 CONTROL SEGMENTS	240
22.6 USER SEGMENTS	241
22.7 GPS SATELLITE CONSTELLATION.....	242
22.8 TYPES OF GPS	244
22.8.1 <i>I. DGPS:</i>	245
22.8.2 <i>II. A-GPS:</i>	245
22.8.3 <i>III. S-GPS:</i>	246
22.8.4 <i>IV. Non-differential-GPS:</i>	246
22.9 APPLICATIONS OF GPS	246
22.10 REMOTE SENSING:	250
22.10.1 <i>Why Remote Sensing?</i>	250
22.10.2 <i>History of Remote Sensing</i>	250
22.10.3 <i>Remote Sensing Data Collection</i>	253
22.10.4 <i>Electromagnetic Radiation</i>	253
22.11 MAP PROJECTION	254
22.11.1 <i>What is Map Projection?</i>	254
22.12 WHY IS THIS IMPORTANT?	255
22.13 STEPS INVOLVED IN THE MAP PROJECTION	255
22.13.1 <i>World Geodetic System 1984</i>	259
22.14 DGPS.....	268
22.15 TOTAL STATION SURVEY:	268
22.15.1 <i>Objectives of Using Total Station Survey</i>	269
22.16 DRONE:.....	270
22.17 GEOREFERENCING:	270