

1	TOWN PLANNING AND HISTORY OF TOWN PLANNING ACTS	9
1.1	GENERAL:.....	9
1.1	OBJECTS OF TOWN PLANNING:	9
1.1.1	<i>Beauty:</i>	9
1.1.2	<i>Convenience:</i>	9
1.1.3	<i>Environment:</i>	9
1.1.4	<i>Health:</i>	10
1.2	PRINCIPLES OF TOWN PLANNING:.....	10
1.3	NECESSITY OF TOWN PLANNING:.....	12
1.2	UNHEALTHY LIVING CONDITIONS, ETC.	12
1.4	ORIGIN OF TOWNS:	13
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:.....	20
1.8	DISTRIBUTION OF LAND USE:.....	20
1.9	TYPES OF TOWN PLANNING:	21
1.10	SITE FOR AN IDEAL TOWN.....	24
1.11	REQUIREMENTS OF NEW TOWNS:	25
1.11.1	<i>Function of the town:</i>	25
1.11.2	<i>Welfare of the people:</i>	25
1.12	GENERAL REQUIREMENTS:	25
2	PLANNING THEORIES	25
2.1	SIR EBENEZER HOWARD	25
2.1.1	<i>About Ebenezer Howard...</i>	25
2.1.2	<i>The 'Three Magnets' theory...</i>	26
2.1.3	<i>The 'Garden City' concept...</i>	27
2.2	LETCWORTH GARDEN CITY... ..	29
2.3	WELWYN GARDEN CITY.....	29
2.4	SIR RAYMOND UNWIN... ..	30
2.4.1	<i>Satellite town characteristics...</i>	30
2.5	SIR PATRICK GEDDES LIFE AND WORK.....	31
2.5.1	<i>Father of Town Planning</i>	31
2.6	CLARENCE PERRY NEIGHBOURHOOD CONCEPT.....	34
2.6.1	<i>Introduction</i>	35
2.6.2	<i>Principles of Planning</i>	35
2.7	CONCENTRIC ZONE THEORY	36
2.8	SECTOR THEORY.....	37
2.9	MULTIPLE-NUCLEI THEORY	37
3	TOWN PLANNING IN ANCIENT INDIA:-.....	39

3.1	TOWN PLANNING SYSTEM OF INDUS VALLEY CIVILIZATION (HARAPPAN CIVILIZATION):-	39
3.1.1	Main Features Of Town Planning In Indus Valley Civilisation:-	39
3.1.2	Development Of Cities:-	39
3.1.3	Town Planning In Mohenjo-Daro :-	40
	In Mohenjo-Daro, Settlement Divisions Were As Follows :-	40
3.1.4	CONSTRUCTION TECHNIQUES IN MOHENJO-DARO:-	40
	Mohenjo-Daro - Great Bath :-	40
3.1.5	Mohenjo-Daro : Granary :-	41
3.1.6	Town Planning In Harappa :-	41
3.1.7	Harappa's Drainage System :-	42
3.2	TOWN PLANNING IN MEDIEVAL PERIOD:-	42
3.3	PLANNING HIERARCHY IN INDIA:	43
3.4	OVERALL HISTORY OF TOWN PLANNING:	44
3.4.1	Cities and Their Planners.....	47
3.5	SHILPA SHASTRA	48
3.5.1	Dandaka	48
3.5.2	Sarvatobhadra	49
3.5.3	Nandyavarta	50
3.5.4	Padmaka(Lotus Petals)	50
3.5.5	Swastika	51
3.5.6	Prastara.....	51
3.6	MODERN CITIES IN INDIA	53
3.6.1	Edwin Lutyens- Delhi.....	53
3.7	CHANDIGARH CITY.....	57
3.7.1	First Plan by Albert Mayor	57
3.7.2	Le Corbusier.....	57
3.8	JAIPUR	58
4	PLANNING PROCESS.....	61
4.1	SCOPE AND PURPOSE OF VARIOUS PLANS.....	61
4.1.1	Perspective Plan.....	61
4.1.2	Regional Plan	61
4.1.3	Development Plan.....	61
4.1.4	Master Plan to be referred as Development Plan.....	62
4.1.5	Local Area Plan.....	62
4.1.6	Special Purpose Plan	62
4.1.7	Annual Plan	63
4.1.8	Inter-relationship among various plans	63
4.2	CONTENTS OF PLANS	64
4.2.1	Perspective Plan	64
4.2.2	Contents of Regional Plan	65
4.2.3	Contents of Development Plan	68
4.2.4	Implementation Plan.....	74
4.2.5	Local Area Plan (Ward Plans).....	77

4.3	POPULATION FORECASTING METHODS:	77
4.3.1	ARITHMETICAL INCREASE METHOD.....	77
4.3.2	GEOMETRICAL INCREASE METHOD (GEOMETRICAL PROGRESSION METHOD)	77
4.3.3	INCREMENTAL INCREASE METHOD	77
4.3.4	GRAPHICAL METHOD	78
4.3.5	COMPARATIVE GRAPHICAL METHOD	78
4.3.6	MASTER PLAN METHOD.....	78
4.3.7	LOGISTIC CURVE METHOD	78
5	PLANNING TECHNIQUES.....	79
5.1	TYPES OF DATA.....	79
5.1.1	Primary Survey Techniques	79
5.2	SECONDARY DATA COLLECTION TECHNIQUES.....	79
5.2.1	Definition.....	79
5.2.2	A. Published Sources	80
5.2.3	B. Unpublished Sources	80
5.3	7.3 TYPES OF SURVEYS IN PLANNING	80
5.3.1	Socio-Economic Survey.....	80
5.3.2	Land Use / Land Utilization Survey	80
5.3.3	Density Surveys	81
5.3.4	Infrastructure Surveys.....	81
5.4	MAPPING	81
5.4.1	Scale of Map.....	82
6	METROPOLITAN REGIONAL PLAN	83
6.1	CLASSIFICATION OF URBAN SETTLEMENTS	83
6.1.1	1. Statutory Towns.....	83
6.1.2	URDPFI Classification of Urban Settlements.....	83
6.1.3	Urban Planning Approach.....	84
6.2	PLANNING SYSTEM FRAMEWORK	85
6.3	WHAT IS REGION?	86
6.3.1	Types of Regions:	86
6.4	WHAT IS REGIONAL PLANNING: -	88
6.4.1	Concept of Regional Planning:.....	89
6.4.2	Object & Need of Regional Planning:.....	89
6.4.3	Settlement Hierarchy:	89
6.4.4	Types of Regions (Classification of Regions)	90
6.4.5	Formal regions:	92
6.4.6	Functional region:	93
6.5	CONTENTS OF REGIONAL PLAN:	94
6.6	SURVEYS OF REGIONS	94
6.6.1	Geography of the Region	95
6.6.2	Population projection:.....	95
6.6.3	Settlement pattern.....	95

6.6.4	Transportation	95
6.6.5	Physical and Socio Economic linkages	96
6.7	SWOT ANALYSIS	99
6.8	PROPOSALS OF REGIONAL PLAN:	99
6.8.1	Metropolitan Planning Region	100
6.8.2	Approach of Plan Preparation.....	100
6.8.3	Aspects of Investment Region Planning.....	100
6.8.4	Criteria for Delineation of Region	101
6.8.5	Techniques for Delineation	102
6.9	LAND USE CLASSIFICATION FOR REGIONAL PLANNING	103
6.9.1	1. Urbanisable Zone (U Zone).....	103
6.9.2	2. Industrial Zone (I Zone)	103
6.9.3	3. Transport and Communication Zone (T Zone)	103
6.9.4	4. Primary Activity Zone (PA Zone).....	104
6.9.5	5. Open Area Zone (O Zone).....	104
6.9.6	6. Protective and Eco Sensitive Zone (E Zone).....	104
6.9.7	7. Special Area Zone (S Zone).....	104
7	URBAN AND REGIONAL PLANNING IN INDIA:.....	106
7.1	ECO SENSITIVE ZONE:	106
7.1.1	Activities Allowed in ESZs.....	106
7.1.2	Significance of ESZs	106
7.2	POLLUTER PAY PRINCIPAL	106
7.3	COSTAL REGULATION ZONE.....	108
7.3.1	Purpose of CRZ Regulation:.....	108
7.3.2	History of CRZ.....	109
7.3.3	Primary Classification of CRZ	110
8	DEVELOPMENT PLAN	118
8.1	WHAT IS DEVELOPMENT PLAN: -	118
8.2	WHAT IS THE IMPORTANCE OF A MASTER PLAN?	118
8.2.1	Objectives of Master Plan	118
8.3	GIS BASED LAND USE	119
	Preparation of GIS Base Map.....	120
	Need For GIS Based DP:	120
8.3.1	Use of GIS Based DP.....	120
8.4	PROCESS FLOW OF DP PREPARATION.....	123
8.4.1	Methodology.....	123
8.5	PREPARATION OF PROPOSED LAND USE PLAN.....	126
8.5.1	Population Projection.....	127
	Population Projection Methods	127
8.6	CLASSIFICATION OF TOWNS AS PER ACT.....	128
8.7	CLASSIFICATION OF TOWNS & CITIES (BY CENSUS OF INDIA).....	128
8.8	TYPES OF SURVEYS	128

8.8.1	<i>Socio-Economic Survey</i>	129
8.8.2	<i>Land use/utilisation Surveys</i>	129
8.8.3	<i>Density Surveys</i>	129
9	URBAN INFRASTRUCTURE SERVICES AND AMENITIES	131
9.1	WHY SET OF STANDARDS FOR PLANNING?	131
9.2	OBJECTIVE	131
9.3	PRIMITIVE DEVELOPMENT OF HUMAN SETTLEMENT	132
9.3.1	<i>Settlement Followed By the Need Of The People</i>	132
9.4	TOWNS EVOLVED OUT OF ASPIRATION OF THE PEOPLE	132
9.5	GROWTH OF PLANNING IN MODERN INDIA.....	134
9.6	GROWTH OF PLANNING ACROSS THE GLOBE (IN DEVELOPED COUNTRIES)	134
9.7	NEED OF BALANCED APPROACH.....	134
9.8	CHALLENGE BEFORE CITY PLANNERS.....	134
9.9	THE PREVAILING NORMS AND STANDARDS.....	135
9.9.1	<i>GLOBAL GOALS AND PRACTICES</i>	135
9.9.2	<i>Global Goals</i>	135
9.9.3	<i>National and State Standards</i>	136
9.10	WATER SUPPLY	136
9.10.2	<i>Fire Fighting Demand</i>	137
9.10.3	<i>Institutional Water Demand</i>	137
9.10.4	<i>Industrial Units Water Demand</i>	137
9.10.5	<i>Station Water Requirements</i>	137
9.11	SEWERAGE& SANITATION.....	138
9.12	SOLID WASTE MANAGEMENT: KEY POINTS	139
9.13	SOCIAL INFRASTRUCTURE: ENHANCING QUALITY OF LIFE	139
9.13.1	<i>Provision of Infrastructure</i>	139
9.13.2	<i>Specific Infrastructure Norms</i>	140
10	SPECIAL AREA PLAN	144
10.1	ECO-SENSITIVE AREAS	144
10.2	ZONAL PLANS, SECTOR PLANS	144
10.2.1	<i>Contents of a Zonal Plan</i>	145
10.2.2	<i>Functions of a Zonal Plan</i>	145
11	DISASTER MANAGEMENT.....	147
11.1	WHAT IS DISASTER?	147
11.2	VULNERABILITY	148
11.3	DISASTER MANAGEMENT IN INDIA.....	151
11.4	NATIONAL DISASTER MANAGEMENT ACT 2005.....	152
11.4.1	<i>National Disaster Management Authority</i>	153
11.5	NATIONAL DISASTER MANAGEMENT PLAN, 2016	153
11.5.1	<i>Hyogo Framework for Action</i>	154
11.5.2	<i>Objective of Disaster Management Act 2005</i>	155

11.5.3	National Disaster Management Authority (NDMA)	156
11.5.4	State Disaster Management Authority:	157
11.5.5	District Disaster Management Authority:	157
11.5.6	Local Authority:	158
11.6	NATIONAL INSTITUTE OF DISASTER MANAGEMENT	158
11.7	NATIONAL DISASTER RESPONSE FORCE:	158
11.8	NATIONAL DISASTER RESPONSE FUND	158
11.9	RESILIENT CITIES	159
11.10	INCIDENT RESPONSE SYSTEM	159
11.10.1	IRS Organisation	160
11.10.2	Incident Response Teams	160
11.10.3	Organisational Flexibility	161
11.10.4	IRS Training	161
11.10.5	IRS Notification	161
12	TOWN PLANNING SCHEME AND LAND POOLING TECHNIQUES	162
12.1	EVOLUTION OF CURRENT TOWN PLANNING SCHEME MECHANISM:	162
12.2	WHY T P SCHEME MECHANISM WORKS:	162
12.3	OTHER EXAMPLES OF LAND POOLING, READJUSTMENT AND RECONSTITUTION:	164
12.4	RAJASTHAN LAND POOLING SCHEME ACT 2016	165
13	GOVERNMENT SCHEMES AND MISSIONS	180
13.1	SMART CITY	180
13.2	ATAL MISSION FOR REJUVENATION AND URBAN TRANSFORMATION	184
13.2.1	URBAN REFORMS AND CAPACITY BUILDING	186
13.3	PRADHAN MANTRI AWAS YOJNA (PMAY)	187
13.3.1	Definition:	188
13.3.2	Implementation Methodology:	189
13.4	HERITAGE CITY DEVELOPMENT AND AUGMENTATION YOJANA (HRIDAY)	191
14	LOCAL AREA PLAN	193
14.1	METHODOLOGY FOR PREPARATION OF LAP	193
14.2	METHODOLOGY FOR PREPARATION OF LAP	194
14.3	LOCAL AREA PLAN (URDPFI GUIDELINES)	194
14.4	CONTENTS OF LOCAL AREA PLAN	194
14.5	CONTENTS OF ZONAL DEVELOPMENT PLAN	195
15	URBANIZATION AND URBAN DEVELOPMENT	197
16	POLICIES IN INDIA	199
16.1	NATIONAL URBAN TRANSPORT POLICY 2014	199
16.1.1	BACKGROUND	199
16.1.2	VISION	199
16.1.3	OBJECTIVES	199
16.1.4	NEED FOR A NATIONAL POLICY	200

16.2	NATIONAL LAND UTILIZATION POLICY	203
16.2.1	<i>Goal</i>	203
16.2.2	<i>Objective:</i>	203
16.3	LAND UTILIZATION ZONES:.....	204
16.3.1	<i>Land-use Management Areas (LMAs)</i>	204
16.3.2	<i>Implementation Approach</i>	205
16.4	NATIONAL HOUSING POLICY:.....	205
	<i>Housing Policies over the years</i>	205
	<i>Urban Housing Scenario in India Urbanization</i>	205
16.4.1	<i>Strategy to Deal with Housing Shortage</i>	206
	<i>Initiatives by Ministry of Housing & Urban Poverty Alleviation</i>	206
16.5	NATIONAL URBAN HOUSING AND HABITAT POLICY 2007	206
17	GIS, GPS AND REMOTE SENSING.....	208
17.1	GEOSPATIAL TECHNOLOGY	208
17.2	WHAT IS GIS?	208
17.2.1	<i>GIS Data Model/Types</i>	209
17.2.2	<i>Applications of GIS</i>	211
17.3	GLOBAL POSITIONING SYSTEM	239
17.3.1	<i>Introduction</i>	239
17.4	SPACE SEGMENTS.....	240
17.5	CONTROL SEGMENTS	240
17.6	USER SEGMENTS.....	241
17.7	GPS SATELLITE CONSTELLATION.....	242
17.8	TYPES OF GPS	245
17.8.1	<i>I. DGPS:</i>	245
17.8.2	<i>II. A-GPS:</i>	245
17.8.3	<i>III. S-GPS:</i>	246
17.8.4	<i>IV. Non-differential-GPS:</i>	246
17.9	APPLICATIONS OF GPS	247
17.10	REMOTE SENSING:	251
17.10.1	<i>Why Remote Sensing?</i>	251
17.10.2	<i>History of Remote Sensing</i>	251
17.10.3	<i>Remote Sensing Data Collection</i>	254
17.10.4	<i>Electromagnetic Radiation</i>	255
17.11	MAP PROJECTION	255
17.11.1	<i>What is Map Projection?</i>	256
17.12	WHY IS THIS IMPORTANT?	256
17.13	STEPS INVOLVED IN THE MAP PROJECTION	256
17.13.1	<i>World Geodetic System 1984</i>	260
17.14	DGPS.....	270
17.15	TOTAL STATION SURVEY:	271
17.15.1	<i>Objectives of Using Total Station Survey</i>	271
17.16	DRONE:.....	272