

Contents

Environment & Climate Change : Current Issues & Developments.....	7	2.5.6 Floods.....	36
MODULE 1: NATURE, IMPORTANCE AND SCOPE OF ENVIRONMENT STUDIES		2.5.7 Droughts.....	36
1.1 Introduction.....	23	2.5.8 Remedial Measures.....	36
1.2 Importance of the Environment.....	23	2.5.9 Major Benefits and Environmental Problems Created by Dams.....	36
1.3 Multidisciplinary Nature of Environmental Studies	23	2.5.10 Conflicts over Water.....	37
1.4 Values of the Environment.....	23	2.6 Mineral Resources.....	37
1.5 Different Approaches to Impart Environmental Education.....	24	2.6.1 Introduction.....	37
1.6 Methods to Achieve Public Awareness.....	24	2.6.2 Types of Mineral Resources.....	37
1.6.1 Environmental Awareness through Adult Education.....	24	2.6.3 Use and Exploitation.....	38
1.6.2 Environment Awareness through Mass-Media.....	25	2.6.4 Effects of Extraction and Processing of Mineral Resources on Environment.....	39
1.7 Important Environment Related Days.....	25	2.6.5 Recycling and Reuse Benefit the Environment.....	39
1.8 Scope of Environmental Study.....	26	2.6.6 Case Studies Related To Mining Mineral Extraction.....	40
1.9 Importance of Environmental Studies.....	26	2.7 Food Resources.....	42
1.10 Need For Public Awareness.....	27	2.7.1 World Food Problem.....	43
1.11 Role of Individual in Conservation of Natural Resources.....	27	2.7.2 Impacts of Over-Grazing.....	43
1.12 Important Environment Related Movements in India.....	27	2.7.3 Impact of Agriculture.....	44
● Multiple Choice Questions.....	29	2.7.4 Effects of Modern Agriculture.....	44
MODULE 2: NATURAL RESOURCES		2.7.5 Modern Agriculture.....	44
2.1 Introduction.....	30	2.7.6 Water Logging.....	45
2.2 Equitable Use of Resources for Sustainable Lifestyles.....	30	2.7.7 Salinity.....	45
2.3 Renewable and Non-renewable Resources.....	30	2.7.8 Case Studies.....	46
2.4 Forest Resources in India.....	31	2.7.9 Salinity and Water Logging in Rajasthan, Haryana and Punjab.....	46
2.4.1 Over Exploitation.....	33	2.8 Energy Resources.....	46
2.4.2 Uses of Forests.....	33	2.9.1 Renewable and Non-Renewable Energy Sources.....	46
2.4.3 Deforestation Causes, Consequences and Case Studies.....	34	2.9.2 Non-Renewable Energy Sources.....	48
2.5 Water Resources.....	34	2.10.1 Land Resources.....	53
2.5.1 Water Use and Over-Exploitation.....	35	2.10.2 Land Degradation.....	53
2.5.2 Water : A Precious Natural Resource.....	35	2.10.3 Landslides.....	53
2.5.3 Groundwater.....	35	2.10.4 Soil Erosion.....	54
2.5.4 Effects of Groundwater Usage.....	35	2.10.5 Desertification.....	55
2.5.5 Surface Water.....	36	2.10.6 Role of Individual in Conservation of Natural Resources.....	55
		2.10.7 Equitable Use of Resources for Sustainable Life Style.....	56
		● Multiple Choice Questions.....	56
		MODULE 3: ECOLOGY AND ECOSYSTEM	
		3.1 Concept of an Ecosystem.....	59
		3.2 Basic Structure of an Ecosystem.....	59

3.3	Functions of Ecosystem.....	60	5.2.1	Various Sources Producing these Harmful Gases in the Atmosphere.....	84
3.3.1	Food Chain.....	60	5.2.2	Effects of Air Pollution on Human Health....	85
3.3.1.1	Trophic Levels in a Food Chain.....	60	5.2.3	Indoor Air Pollution.....	85
3.3.2	Food Web.....	60	5.2.4	Acid Rain.....	85
3.3.3	Energy Flow.....	61	5.2.5	Global Warming.....	86
3.4	Energy Flow in Ecosystems.....	61	5.2.6	Ozone Hole.....	86
3.5	Food Chain.....	61	5.2.7	How can we solve the Problem of Air Pollution?.....	86
3.5.1.	Grazing Food Chain.....	61	5.2.8	How can We help to Cut Air Pollution?.....	87
3.5.2.	Parasitic Food Chain.....	62	5.3	Water Pollution.....	87
3.5.3	Detritus Food Chain.....	62	5.3.1	Types, Effects and Sources of Water Pollution.....	87
3.6	Food Web.....	62	5.3.2	Control Measures of Water Pollution.....	88
3.7	Ecological Pyramid.....	63	5.4	Soil Pollution.....	88
3.7.1	Pyramid of Numbers.....	63	5.4.1	Types, Effects and Sources of Soil Pollution.....	88
3.7.2	Pyramid of Biomass of Organisms.....	63	5.4.2	Control Measures of Soil Pollution.....	89
3.7.3	Pyramid of Energy.....	63	5.4.3	Harmful Effects of Pollution.....	89
3.8	Ecological Succession.....	64	5.5	Marine Pollution.....	89
3.8.1	Primary and Secondary Succession.....	64	5.5.1	Introduction.....	89
3.8.2	Secondary Succession.....	64	5.5.2	Causes/Sources of Marine Pollution.....	90
3.8.3	Mechanism of Succession.....	64	5.5.3	Effects of Marine Pollution.....	90
3.8.4	Seral Communities.....	65	5.5.4	Control Measures for Marine Pollution.....	90
3.8.5	Climax Community.....	65	5.6	Noise Pollution.....	91
3.9	Introduction, Types, Characteristic Features, Structure and Function of Some Ecosystems.....	65	5.6.1	Introduction.....	91
3.9.1	Forest Ecosystem.....	65	5.6.2	Sources and Causes of Noise Pollution.....	91
3.9.1.1	Types of Forest Ecosystem.....	65	5.6.3	Harmful Effects of Noise Pollution.....	91
3.9.1.2	Structure of Forest Ecosystems.....	65	5.6.4	Measures for Control of Noise Pollution....	92
3.9.2	Grassland Ecosystem.....	65	5.6.5	Noise Pollution in India.....	92
3.9.2.1	Human Impact and Economic Importance.....	66	5.7	Thermal Pollution.....	93
3.9.2.2	Types of Grassland Ecosystem.....	66	5.7.1	Introduction.....	93
3.9.3	Desert Ecosystem.....	66	5.7.2	Causes of Thermal Pollution.....	93
3.9.3.1	Types and Characteristic Features.....	66	5.7.3	Control of Thermal Pollution.....	93
3.9.3.2	Structure and Function.....	66	5.8	Nuclear Pollution.....	93
3.9.4	Aquatic Ecosystem.....	67	5.8.1	Introduction.....	93
3.9.4.1	Marine Ecosystem.....	67	5.8.2	Causes of Radioactive Pollution.....	93
3.9.4.2	Freshwater Ecosystem.....	68	5.8.3	Effects of Nuclear Pollution.....	94
3.16	The Carbon Cycle.....	70	5.8.4	Management of Radioactive Waste.....	94
3.17	The Greenhouse Effect.....	71	5.8.5	Control Measures.....	94
3.4	Individual, Species, Organism.....	71	5.9.	Solid Waste Management	94
●	Multiple Choice Questions.....	72	5.9.1	Introduction.....	94
	MODULE 4 : BIODIVERSITY		5.9.2	Sources of Waste.....	94
4.1	Types of Biodiversity.....	73	5.9.3	Causes for Solid Waste Generation.....	95
4.2	Bio-geographical Classification of India.....	73	5.9.4	Methods and Measures of Disposal.....	95
4.3	Values of the Biodiversity.....	74	5.9.5	Environment.....	95
4.4	Biodiversity at Local, National and Global Levels.....	75	5.10	Role of an Individual in Prevention of Pollution.....	95
4.5	India as Mega-diversity Nation.....	76	●	Multiple Choice Questions.....	96
4.6	Threats to Biodiversity.....	77		MODULE 6 : SOCIAL ISSUES AND ENVIRONMENT	
4.7	Endangered and Endemic Species of India...	78	6.1	Sustainable Development.....	97
4.8	Conservation of Biodiversity.....	79	6.2	What are the Urban Problems Related to Energy of Sustainable Development.....	99
4.9	Important Definitions.....	81	6.3	Water Conservation.....	100
●	Multiple Choice Questions.....	82			
	MODULE 5 : POLLUTION				
5.1	Introduction.....	83			
5.2	Air Pollution.....	83			

6.3.1	Social Solutions.....	100
6.3.2	Household Applications.....	101
6.3.3	Commercial Applications.....	101
6.3.4	Rainwater Harvesting.....	101
6.4	Resettlement and Rehabilitation of People.....	102
6.5	Environmental Ethics.....	102
6.6	Climate Change.....	102
6.6.1	Global Warming and Climate Change.....	103
6.6.2	Greenhouse Gases.....	104
6.6.3	Acid Rain.....	104
6.6.4	Ozone Depletion.....	105
6.6.5	Nuclear Accidents and Holocaust.....	107
6.7	Wasteland Reclamation : 8 Ways of Waste- land Reclamation.....	108
6.8	Consumerism and Waste Product.....	109
6.9	The Wild Life (Protection) Act, 1972.....	109
6.10	Air Act.....	110
6.10.1	State Pollution Control Boards.....	110
6.11	The Water Act.....	111
6.12	Wildlife Protection Act (1972) of India.....	111
6.13	Forest Conservation Act.....	111
6.14	Issues involved in Enforcement of Environmental Legislation.....	111
6.14	Public Awareness.....	112
●	Multiple Choice Questions.....	113

MODULE 7 : HUMAN POPULATION AND ENVIRONMENT

7.1	Population : Definition, Growth and Variation among Nations.....	114
7.2	Population Growth.....	114
7.3	Population Explosion : Definition and Causes of Rapid Population Growth.....	115
7.4	Family Welfare Programmes in India (Meaning and Nature).....	115
7.5	Environment and Human Health : A Global Concern.....	116
7.6	Environment and Human Health are Inter Related.....	117
7.7	Human Rights.....	117
7.6.1	Human Rights and Environment.....	117
7.7	Value Education.....	118
7.8	HIV, AIDS and Child Welfare.....	118
7.9	Women and Child Welfare.....	119
7.10	Role of Information Technology in Environment and Human Health.....	120
●	Multiple Choice Questions.....	121

MODULE 8 : DISASTER MANAGEMENT

8.1	Introduction.....	122
-----	-------------------	-----

8.2	Factors Enhancing the Effects of Disaster...	122
8.3	Disaster Management.....	122
8.4	Various Agencies involved in Disaster Management.....	123
8.5	Causes for Occurrence of Disaster.....	123
8.6	Impacts of Disaster.....	123
8.7	Vulnerability Profile of India.....	123
8.8	Severe Disasters in India in Past.....	123
8.9	Disaster Management in Stages.....	123
8.10	Disaster Risk Reduction (DRR).....	124
8.11	Challenges in Disaster Risk Reduction.....	124
8.12	Organizations related to Disaster Manage- ment Framework at Global Level.....	124
8.13	Organizations and Policies related to Disaster Management Framework at National Level.....	124
8.14	Common Type of Disasters in India.....	125
8.15	Structure of Disaster Management System in India.....	134
8.16	Funding in Disaster Management.....	135
8.17	International Cooperation in Disaster Management.....	135
8.18	Sendai Framework.....	136
8.19	India's Action on Sendai Framework.....	137

MODULE 9 : FIELD VISIT

Project-1	Study of A River.....	138
Project-2	Study Tour to A Forest.....	138
Project-3	Study Tour to A Grassland.....	138
Project-4	Study Tour to A Mountain or A Hill.....	138
Project-5	Visit to Some Local Polluted Site.....	138
Project-6	Study of A Water-Logged/Saline Land.....	138
Project-7	Study of Common Plants, Insects and Birds.....	139
Project-8	Analysis of Water Supply at Homes.....	139
Project-9	Analyze the Indoor Environment at Homes.....	139

MODULE 10

Conserving Biodiversity.....	140-143
------------------------------	---------

MODULE 11

Biodiversity and the Indian Law.....	144-149
--------------------------------------	---------

MODULE 12

International Environmental Laws and Agreements.....	150-156
---	---------

MODULE 13

International Summits and Declarations.....	157-167
--	---------

MODULE 14

Solution of Previous Years' Questions in Civil Services.....	168-182
---	---------

MODULE 15

Solution of Questions Asked in UPPCS...	183-194
---	---------