



May 1, 2026

unit-1-ecosystem-biodiversity — Overview

Unit 1 — Syllabus Coverage

Topics (Weightage: 10% | Hours: 4)

- 1.1 Definition & Scope of Sustainability
Structure and Function of Ecosystems
Food Chain, Food Web, Ecological Pyramids
- 1.2 Biogeochemical Cycles: Carbon, Nitrogen, Sulphur, Phosphorus
- 1.3 Importance of Biodiversity
Threats to Biodiversity
Conservation Strategies (in-situ & ex-situ)

GTU PYQ: Su'25, W'25 — MCQs + 4M + 7M descriptive

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Key Definition

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Source Coverage

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Unit Summary & Revision

Next Steps

- Review all condensed frames above
- Compare with original full unit for deep understanding
- Practice worked examples and PYQ problems



May 1, 2026

unit-2-waste-management-pollution — Overview

Unit 2 — Syllabus Coverage

Topics (Weightage: 25% | Hours: 7)

- 2.1 Air pollution: classification, sources, control equipment
- 2.2 Water pollution parameters: BOD, COD, pH, TSS, Turbidity
- 2.3 Wastewater treatment (primary, secondary, tertiary)
Solid waste: generation, sources, characteristics
- 2.4 Municipal solid waste (MSW) collection & disposal
Hazardous waste collection & disposal
- 2.5 Noise pollution and effects
Plastic waste hazards; E-waste hazards

GTU PYQ: Su'25, W'25 — MCQs + 4M + 8M descriptive (highest weightage unit)

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Unit Summary & Revision

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- Compare with original full unit for deep understanding
- Practice worked examples and PYQ problems



May 1, 2026

unit-3-renewable-energy — Overview

Unit 3 — Syllabus Coverage

Topics (Weightage: 25% | Hours: 7)

- 3.1 Introduction: Renewable vs Non-renewable, advantages, India status
- 3.2 Solar energy: photovoltaic (solar cell), solar thermal, water heater, cooker
- 3.3 Wind energy: turbine types, working, HAWT vs VAWT
- 3.4 Biomass energy: biogas (fixed dome, floating drum), biofuels
- 3.5 Hydropower, tidal, wave, OTEC
- 3.6 Geothermal energy, hydrogen energy, fuel cells
- 3.7 Energy conservation, efficiency, BEE, green buildings

GTU PYQ: Su'25, W'25 — Solar cell, biogas plant, wind turbine (25% weightage)

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unit-4-climate-change — Overview

Unit 4 Syllabus Overview

(20% Weightage, 6 Hours)

Unit 4 Topics

- 4.1 Greenhouse Effect and Greenhouse Gases
- 4.2 Global Warming — Causes, Evidence, Consequences
- 4.3 Climate Change Impacts (sea level, extreme weather, biodiversity)
- 4.4 Carbon Footprint, Carbon Credits and Carbon Trading
- 4.5 Mitigation Strategies (renewables, carbon capture, afforestation)
- 4.6 Adaptation Strategies (disaster management, resilient agriculture)
- 4.7 International Climate Agreements (Kyoto, Paris, COP)

20% marks | 6 lecture hours | PYQ topics: GHG, Paris Agreement, Carbon footprint, Mitigation vs Adaptation

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May 1, 2026

unit-5-policy-governance — Overview

Unit 5 Syllabus Overview

(20% Weightage, 6 Hours)

Unit 5 Topics

- 5.1 Environmental Laws in India (EPA 1986, WPA 1972, FCA 1980)
- 5.2 Pollution Control Rules (Air, Water, Noise, Plastic, E-Waste)
- 5.3 Environmental Impact Assessment (EIA)
- 5.4 Environmental Management System (EMS) — ISO 14001 / EMAS
- 5.5 Global Environmental Agreements (UNFCCC, CBD, CITES, Basel, Montreal, Stockholm)
- 5.6 Corporate Social Responsibility (CSR) in Environment
- 5.7 NGOs, Public Participation and Right to Information

20% marks | 6 lecture hours | PYQ topics: EPA 1986, EIA process, ISO 14001, International conventions

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