

General Studies Pre cum Mains Foundation Batch Lecture Plan

General Studies- I (Geography), III (Ecology and Environment)

Total no. of Sessions- 55

By Laxmikanth Jaybhaye

Topics	Sub- Topics	Sessions
Geomorphology (Part-1)	<ul style="list-style-type: none"> • Introduction to Geography • Origin of Earth and Solar system 	Session-1
	Interior of the Earth: <ul style="list-style-type: none"> • Sources of information about earth's interior • Seismology: Earthquake waves, shadow zones • Structure and Composition of earth's interior 	Session-2
	<ul style="list-style-type: none"> • Magnetic field of Earth and related phenomenon 	Session-3
	<ul style="list-style-type: none"> • Endogenic and Exogenic geomorphic movements, Weathering, Mass movement and Erosion processes 	Session-4
	Tectonic theories: <ul style="list-style-type: none"> • Continental Drift Theory 	Session-5
	<ul style="list-style-type: none"> • Seafloor Spreading Hypothesis • Plate Tectonic Theory 	Session-6
	<ul style="list-style-type: none"> • Different types of plate boundaries and associated phenomenon 	Session-7
Geomorphology (Part-2)	<ul style="list-style-type: none"> • Volcanism: Volcanic landforms, Types of volcanoes, Distribution of volcanoes, Geysers & Hot springs, Effects 	Session-8
	Landforms & their evolution: <ol style="list-style-type: none"> 1. Landforms formed by running water (Fluvial landforms) 2. Landforms formed by glaciers (Glacial landforms) 3. Landforms formed by groundwater (Karst topography) 4. Landforms formed by waves (Marine/Coastal landforms) 5. Landforms formed by wind (Aeolian/Desert landforms) 	Session-9
Climatology	<ul style="list-style-type: none"> • Atmosphere of the Earth: Evolution, Composition and Structure 	Session-10
	<ul style="list-style-type: none"> • Factors affecting distribution of temperature on Earth surface • Heat Budget 	Session-11

Climatology	<ul style="list-style-type: none"> • Pressure belts • Tri-cellular model of general circulation of wind • Types of winds: Planetary, Seasonal, Local winds 	Session-12
	Hydrological phenomenon: <ul style="list-style-type: none"> • Water cycle • Forms of condensation • Types of rainfall • World Distribution of rainfall 	Session-13
	<ul style="list-style-type: none"> • Tropical cyclones • Jet streams 	Session-14
	<ul style="list-style-type: none"> • Air mass • Temperate cyclone 	Session-15
	<ul style="list-style-type: none"> • Comparison between tropical and temperate cyclones • Koppen's climatic classification 	Session-16
	<ul style="list-style-type: none"> • Contemporary climate phenomenon: El Nino, La Nina, ENSO, El Nino Modoki, Indian Ocean Dipole (IOD) 	Session-17
	Oceanography	<ul style="list-style-type: none"> • Major and minor Ocean relief features • Temperature and Salinity distribution of Oceans
Oceanic movements: <ul style="list-style-type: none"> • Waves • Tides • Ocean currents 		Session-19
<ul style="list-style-type: none"> • Ocean deposits • Marine resources: Biotic and Abiotic 		Session-20
<ul style="list-style-type: none"> • Coral reefs and Coral bleaching • United Nations Convention on Law of the Seas (UNCLOS) 		Session-21
World Mapping	<ul style="list-style-type: none"> • All Continents of the world 	Session-22
Geography of India	<ul style="list-style-type: none"> • Structure and Physiographic divisions of India (part-1) 	Session-23
	<ul style="list-style-type: none"> • Structure and Physiographic divisions of India (part-2) 	Session-24
	<ul style="list-style-type: none"> • Drainage system of India 	Session-25
	<ul style="list-style-type: none"> • Climate of India: Understanding the Monsoon phenomenon and rainfall distribution in India 	Session-26

Geography of India	<ul style="list-style-type: none"> • Climate of India: Non-monsoon rainfall in India and its significance, Weather conditions during winter and summer. 	Session-27
	<ul style="list-style-type: none"> • Natural vegetation – Types, Distribution of vegetation, Factors responsible for diversity of natural vegetation • Soils of India 	Session-28
India Mapping	<ul style="list-style-type: none"> • Important physical features, landforms, waterbodies and their location on map. 	Session-29
Human and Economic geography	<ul style="list-style-type: none"> • Population geography: Distribution, Density, Growth & Composition 	Session-30
	<ul style="list-style-type: none"> • Human Development: Meaning, Approaches, Measurement of human development, HDR & HDI 	
	<ul style="list-style-type: none"> • Human Settlements: Types of rural settlements, Urbanisation in India, functional classification of towns 	
Economic geography (Resources & Industries)	<ul style="list-style-type: none"> • Distribution of Key Natural Resources across the world (including South Asia and the Indian sub-continent): • Iron ore and Coal 	Session-31
	<ul style="list-style-type: none"> • Mineral oil and Natural gas, Coalbed Methane, Shale Gas 	Session-32
	<ul style="list-style-type: none"> • Other minerals: Bauxite, Lead, Gold, Silver, Manganese, Copper, Lithium, Diamond, Limestone, Mica, Uranium, Thorium etc. 	Session-33
	<ul style="list-style-type: none"> • Biotic resources - Forests, fisheries and wildlife • Water resources and Soil & land as a resource 	Session-34
	<ul style="list-style-type: none"> • Factors responsible for the location of primary, secondary, and tertiary sector industries in various parts of the world (including India): • Primary sector industries – Agriculture & allied activities, mining & quarrying 	Session-35
	<ul style="list-style-type: none"> • Secondary sector industries - Manufacturing 	Session-36
	<ul style="list-style-type: none"> • Secondary sector industries – Manufacturing • Industrial corridors of India, SEZ policy 	Session-37
	<ul style="list-style-type: none"> • Tertiary sector industries – Service sector, Transport, Communication and Space, Tourism, Foreign trade 	Session-38

Important Geophysical phenomenon	<ul style="list-style-type: none"> • Earthquakes • Tsunami • Landslides, Mudslides, Avalanche • Volcanic activity • Cyclones • Thunderstorms, lightening, tornado • Floods, flash floods, urban floods • Droughts • Desertification • Locust attack • Forest fires • Heat wave and Cold wave 	Session-39
Contemporary issues	Changes in critical geographical features (including waterbodies and icecaps) and in flora and fauna and the effects of such changes: <ul style="list-style-type: none"> • Global warming and Climate Change • Different manifestations of global warming and climate change: Melting of glaciers, icecaps; Sea level rise etc. 	Session-40
(Ecology and Environment)		
Introduction	<ul style="list-style-type: none"> • Syllabus description • Overview of Previous Year Questions • Understanding the basic concepts: • Ecology, Environment, Ecosystem and Habitat – Meaning, differences between them. • Ecology – Meaning, levels of organizations in ecology, principles of ecology 	Session-41
Ecosystem	<ul style="list-style-type: none"> • Ecosystem- Meaning, components (biotic & abiotic), classification of ecosystem, ecosystem services. • Ecological Niche – Meaning, types. • Ecotone – Meaning, characteristics, edge effect, edge species. • Terrestrial ecosystems or Biomes • Aquatic ecosystems (including wetland ecosystem) 	Session-42
Functions of Ecosystem	<ul style="list-style-type: none"> • Energy flow through food chain: • Food chain- Meaning, types, • Food web, Types of biotic interactions • Ecological pyramids – meaning, types • Ecological efficiency • Bio-accumulation & bio-magnification 	Session-43
Nutrient recycling, biogeochemical	<ul style="list-style-type: none"> • Nutrient recycling or biogeochemical cycles – Meaning, types • Ecological success or ecosystem development – Meaning, stages, types • Homeostasis or feedback control mechanism 	Session-44

Biodiversity	<ul style="list-style-type: none"> • Basic concepts: Biodiversity – Meaning, types of diversities, importance. Endemism, bio-prospecting, bio-piracy Plant and Animal diversity of India • Causes of loss of biodiversity • Consequences of loss of biodiversity 	Session-45
Biodiversity conservations	<ul style="list-style-type: none"> • In-situ: National Parks, Wildlife sanctuaries, Biosphere reserves, community reserve, conservation reserve, eco-sensitive zones, sacred groves • Ex-Situ: Botanical garden, zoological parks, gene banks, • Biodiversity hotspots, Biodiversity cold spots, World heritage sites • National initiatives • International Initiatives 	Session-46
Global Warming & Climate Change	<ul style="list-style-type: none"> • Greenhouse gases and Global Warming • Ozone depletion • Ocean acidification 	Session-47
	<ul style="list-style-type: none"> • Impact of global warming and climate change • Mitigation strategy • International conventions, Organisations dealing with climate change 	Session-48
Environmental Pollution	<ul style="list-style-type: none"> • Air pollution, Water pollution, Soil pollution, Noise pollution, Radioactive pollution, E-waste, Solid waste, Thermal pollution, Plastic pollution, Hazardous waste – causes, effects, prevention & control • Relevant concepts: Bioremediation, Acid rain 	Session-49
Laws & policies	<ul style="list-style-type: none"> • Pollution related laws • Environment (Protection) Act 1986 • EIA • Wildlife (Protection) Act 1972 • Forest (Conservation) Act 1980 	Session-50
	<ul style="list-style-type: none"> • Biodiversity Act 2002 • Forest Rights Act 2006 • National Green tribunal Act 2010 • Coastal Regulation Zones Rules • National Forest Policy 1988 • Waste Management Rules 	Session-51
Institutions	<ul style="list-style-type: none"> • Animal Welfare Board of India • Central Zoo Authority • The National Biodiversity Authority • Wildlife Crime Control Bureau • National Lake Conservation Plan • National Ganga River Basin Authority • Wildlife Trust of India • Compensatory Afforestation Management 	Session-52

Agriculture	<ul style="list-style-type: none"> • Evaluation of Green revolution – pros and cons • Sustainable agriculture practices – Organic farming, ZBNF, Precision farming, Permaculture, Zero tillage, Integrated Farming System 	Session-53
Renewable energy	<ul style="list-style-type: none"> • Types, advantages, disadvantages • Biofuels • Hydrogen as a fuel . Steps taken by India 	Session-54
Contemporary environmental issues	<ul style="list-style-type: none"> • Economic growth Vs Environment Protection debate • Depletion of water resources and water conservation • Himalayan ecosystem – Importance, threats/challenges, Mitigation • Sand mining in India • Man-Animal conflicts • GM crops and GMOs • Coral Bleaching and conservation • Western Ghats – biodiversity, threats/challenges, Committee recommendations (Madhav Gadgil and Kasturiranjana) 	Session-55