

ENVIRONMENTAL SCIENCE: Environmental Science is open to all students.
70 questions per exam.

JANUARY TEST:

Scientific method, correlations, statistics, models, graphing & interpreting graphs

Earth - Geologic time scale; plate tectonics, earthquakes, volcanism; seasons; solar intensity & latitude

Atmosphere - Composition; structure; weather & climate; atmospheric circulation, Coriolis Effect; atmosphere-ocean interactions

Ecosystem Structure - Biological populations and communities; ecological niches; interactions among species; keystone species; species diversity and edge effects; major terrestrial and aquatic biomes

Energy- Photosynthesis, cellular respiration; energy webs, pyramids, trophic levels

Ecosystem Change-Climate shifts; species movement; ecological succession
Biogeochemical Cycles Carbon, nitrogen, phosphorus, sulfur, water

Population- Population concepts, population ecology; carrying capacity; reproductive strategies; survivorship

Human population dynamics- Historical population sizes; distribution; fertility rates; growth rates & doubling times; demographic transition; age-structure diagrams

Population size- Strategies for sustainability; national policies

Impacts of growth- Hunger; disease; economic effects; habitat destruction

FEBRUARY TEST-

Scientific method, correlations, statistics, models, graphing & interpreting graphs,
Impacts of growth - Hunger; disease; economic effects; habitat destruction

Agriculture - types of agriculture; Green Revolution; genetic engineering and crop production; deforestation; irrigation; sustainable agriculture

Controlling pests- Types of pesticides; costs/benefits of pesticide use; IPM ,

Forestry-Tree plantations; old growth forests; forest & fire management; national forests

Rangelands- Overgrazing; deforestation; desertification; rangeland management; federal rangelands

Soil and Soil Dynamics - Rock cycle; formation; composition; physical & chemical properties; soil types; erosion & other soil problems; soil conservation,

Other Land Use - Urban land development - Planned development; suburban sprawl; urbanization,

Transportation infrastructure - Federal highway system; canals, channels; undeveloped areas; ecosystem impacts,

Public and federal lands- Management; wilderness areas; national parks; wildlife refuges; forests; wetlands,

Land conservation options- Preservation; remediation; mitigation; restoration, Sustainable land-use strategies

MARCH TEST:

Scientific method, correlations, statistics, models, graphing & interpreting graphs,

Mining -Mineral formation; extraction; global reserves, laws

Fishing - Fishing techniques; overfishing; aquaculture; relevant laws

Global Water Resources & Use - Freshwater/saltwater; ocean circulation; agricultural, industrial, and domestic use; surface & groundwater issues; and tidal energy; geothermal; environmental advantages/disadvantages

Air pollution - Sources — primary & secondary; major air pollutants; measurement units; smog; acid deposition- causes & effects; heat islands & temperature inversions; indoor air pollution; remediation and reduction strategies; Clean Air Act and other relevant laws

Noise pollution - Sources; effects; control measures

Water pollution - Types; sources, cause & effects, cultural eutrophication, purification, groundwater pollution, Clean Water Act & other laws, waste & potable water treatment methods.

Solid waste - Types; disposal; reduction

Hazards to human health- Environmental risk analysis; acute and chronic effects; dose-response relationships; air pollutants; smoking and other risks

Hazardous chemicals in the environment - Types of hazardous waste; treatment/disposal of hazardous waste; cleanup of contaminated sites; bio-magnification; relevant laws

APRIL TEST:

Scientific method, correlations, statistics, models, environmental decision-making model, graphing and interpreting graphs,

Stratospheric Ozone - Formation of stratospheric ozone; ultraviolet radiation; causes of ozone depletion; effects of ozone depletion; strategies for reducing ozone depletion; relevant laws and treaties

Global Warming - Greenhouse gases & effect; impacts & consequences of global warming; reducing climate change; relevant laws and treaties

Loss of Biodiversity -Habitat loss; overuse; introduced species; endangered & extinct species, maintenance through conservation relevant laws and treaties

Energy - forms; power; units; conversions; Thermodynamics

Energy Consumption- Industrial Revolution; exponential growth; energy crisis

Fossil Fuel Resources and Use - Formation of coal, oil, and natural gas; extraction/purification methods;World reserves and global demand; synfuels; environmental advantages/disadvantages of sources

Nuclear Energy - Nuclear fission process; nuclear fuel; electricity production; nuclear reactor types; environmental advantages/disadvantages; safety issues; radiation & health; radioactive wastes; nuclear fusion

Hydroelectric Power - Dams; flood control; salmon; silting; other impacts

Energy Conservation - Energy efficiency; CAFE standards; hybrid electric vehicles; mass transit

Renewable Energy - Solar energy; solar electricity; hydrogen fuel cells; biomass; wind energy; small-scale hydroelectric; ocean waves and tidal energy; geothermal; environmental advantages/disadvantages