

वातावरण अधिकृत पदको लिखित परीक्षाको पाठ्यक्रम

1. Environment: Concept, Scope and Practices
 - Development of human society and environment
 - Physical, biological and socio-economic aspects of environment and their interrelationships
 - Environmental degradation and manifestations (Land, water and air)
 - Environmental movements and environmental ethics
2. Ecology
 - Population characteristics and regulations
 - Community characteristics, regulation and succession
 - Ecosystem dynamics: energy flow, biogeochemical cycles
 - Terrestrial biomes and characteristics
3. Environmental Geology
 - Geological materials and structures
 - Weathering and erosion: types, cycle and control
 - Mass movement: causes and mechanisms
 - Fluvial, glacial and aeolian environmental processes
4. Climatology and Hydrometeorology
 - Horizontal and vertical temperature distribution
 - Mechanisms of wind development, air masses dynamics
 - Climatic systems, distribution and classifications
 - Floods: classification, causes, triggering factors
5. Global Environmental Issues
 - Global warming
 - Green economy
 - Payment for ecosystem services
 - Ozone layer depletion and acid rain
6. Water Resources
 - Water resources: sources, extent and assessment
 - Integrated Water Resource Management(IWRM)
 - Water resources of Nepal
 - Problems of water resource management in Nepal
7. Food Resources
 - Major food resources and production
 - Human nutrition and health
 - Food resources of Nepal
8. Energy Resources
 - Energy resources: Sources and classification
 - Alternative energy resources
 - Environmental issues of energy use
 - Energy resource conservation practices
 - Energy resources of Nepal
9. Forest and Biodiversity
 - Forest types and biodiversity status of Nepal
 - Ex-situ and in-situ conservation

- Biodiversity conservation approaches
- Carbon sequestration

10. Resource Economics

- Micro-economic analysis for accounting environmental resources
- Environmental Kuznets curve, cost benefit analysis and resource accounting
- Economic and regulatory instruments to control pollution.

11. Water Pollution

- Point and non-point sources and categories of water pollutants
- Water pollutants effect on human health and ecosystems
- Standard methods of water analysis
- Water and waste water treatment technologies

12. Air Pollution

- Sources and categories of air pollutants
- Emission, transport, receptors of air pollutants, criteria air pollutants
- Air pollutants effects on human health, property and visibility
- Air pollution measurement and emission estimates
- Air pollution control technologies

13. Noise Pollution

- Noise sources and criteria
- Health effects of noise and control mechanisms

14. Waste Management

- Sources, types and composition of solid wastes
- Solid waste management systems
- Issue, generation and management of e-waste, hazardous and hospital waste
- Management of industrial and agricultural chemical pesticides

15. Toxicology and Eco-toxicology

- Acute, sub-acute and chronic toxicity
- Dose and frequency response relationships
- Bioassays and attributes for predicting species response to pollution stress

16. Climate Change

- Climate variability and theories of climate change
- Climate models and model based projections of greenhouse effect
- Climate change impacts: agriculture and food security, water resources , energy, human health, biodiversity, settlement and infrastructure and livelihood
- Vulnerability assessment of climate change and mitigation and adaption approaches(NAPA, LAPA)

17. Environmental Assessment

- Environmental assessment: evolution in global and national perspectives
- Environmental assessment: process, practices, methods and tools
- Strategic environmental assessment for decision making and integrated planning

18. Environmental Management Systems (EMS) & Modeling

- Concept, components and stages of EMS
- ISO 14000 series, standards and certification systems
- Life cycle assessment and environmental labeling
- Types and importance of environmental models

19. Remote Sensing & GIS

- Concept, scope and stages in remote sensing and GIS

- Remote sensing image: acquisition, resolution, analysis and interpretation
- GIS application in assessing environmental studies

20. Environmental Statistics

- Sampling, data analysis and interpretation
- Central tendency, measures of dispersion
- Correlation and regression
- Parametric and non-parametric tests

21. Environmental Governance

- Institutional arrangement (organogram) and environmental governance; concerned stakeholders and networks
- Governance tools and strategies
- Adaptive management and sustainability

22. Guidelines and Standards

- Guidelines and Standards Relating to Air(Ambient, Indoor and Stack) and Water (Tolerance Limits for Industrial Effluents to be Discharged into Public Sewers and Inland Surface Waters); Specific Industrial Effluent Standards

23. Existing Legislations

- Constitution of Nepal; Environmental Protection Act; Environment Protection Rules; National EIA Guidelines; EIA Guidelines for Forestry Sector; EIA Guidelines for Industry Sector; Plant Protection Act; National Parks and Wildlife Conservation Act; Water Resources Act; Forest Act; Soil and Watershed Management Act; Solid Waste Management Act; Pesticides Act; Pesticides Regulation; Hydropower Development Policy; Climate change Policy

24. International Treaties, Protocols & Conventions

- Convention on Biological Diversity, 1992; United Nations Framework Convention on Climate Change, 1992; United National Convention to combat Desertification, 1994; Kyoto Protocol,1997; Vienna Convention for the Protection of the Ozone Layer, 1985; Montreal Protocol on Substances that Deplete Ozone Layer, 1987; Basel Convention on the Control of Transboundary Movements of Hazardous Waste and Their Disposal, 1989; Stockholm Convention on Persistent Organic Pollutants, 2004

25. Urban Environment

- Urbanization and its implications on environment(sanitation, solid and hazardous waste, air pollution, water pollution, groundwater depletion, food security)
- Urbanization infrastructures and environment (housing, water supply and sanitation, waste management, transportation, electricity, markets and commercial areas, religious and heritage sites, open spaces and recreational areas)
- Concept of urban planning and sustainable cities.

26. Land use and Watershed Management

- Land use and environment (Land use pattern and zoning; Guided Land Development (GLD) and land pooling)
- Principles of land use and land reclamation
- Factors governing land utilization and land use pattern
- Scenario of watershed management in Nepal
- Development and conservation challenges in watershed management
- Watershed as ecosystems; Upstream-downstream linkages; Measures for watershed conservation

27. Agriculture and Food Security

- Farming systems
- Modern agriculture and its impacts on environment, green revolution
- Sustainable agriculture and food aid policies
- Food security in Nepal

28. Disaster Risks & Vulnerability Assessment

- Hazard, disaster, risk, exposure and vulnerability analysis
- Disasters due to earthquake, landslide and river bank erosion, flood, GLOF, drought, epidemics, fire and industrial accidents
- Disaster risk management and practices