Seat No.	

Set P

M.Sc. (Environmental Science) (Semester - I) (New) (NEP CBCS)
Examination: March/April - 2026
Introduction to Environment and Ecology (2328101)

Day & Date: Friday, 17-04-2026 Max. Marks: 60
Time: 03:00 PM To 05:30 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative. (MCQ) **08**

1) The primary goal of environmental education is to ____.
   a) Teach only science facts
   b) Promote awareness and stewardship of the environment
   c) Encourage urban development
   d) Focus solely on recycling

2) How many Sustainable Development Goals (SDGs) are there?
   a) 8 b) 12
   c) 17 d) 20

3) Population density refers to ____.
   a) Number of species
   b) Number of individuals per unit area
   c) Number of ecosystems
   d) Number of communities

4) Global warming refers to the ____.
   a) Cooling of Earth's atmosphere
   b) Increase in average temperature of Earth's surface
   c) Fluctuation in daily temperatures
   d) Expansion of polar ice caps

5) In hunting and gathering societies, people depend on ____.
   a) Farming and industry b) Domestication
   c) Wild plants and animals d) Modern technology

6) The concept of "think globally, act locally" is often associated with ____.
   a) Urban planning b) Environmental education
   c) Trade policy d) Space exploration

7) A major cause of deforestation is ____.
   a) Reforestation projects c) Sustainable harvesting
   b) Agricultural expansion d) Wildlife protection

8) Which of the following is a renewable resource?
   a) Coal b) Oil
   c) Solar energy d) Natural gas

B) Write True/False: **04**

1) Earth Day is celebrated on April 22nd every year.
2) There are 10 Sustainable Development Goals set by the United Nations.
3) "No Poverty" is not included in the SDGs.
4) Biodiversity refers to the number of species in a specific area.

Q.2 Answer the following. (Any Six) **12**

a) Describe density and age distribution in ecosystem.
b) Explain Hydrosere.
c) Write a note on scope of environmental science.
d) Write a note on physical and biological environments.
e) Discuss objectives of environmental education.
f) Explain Xerosere.
g) Discuss role of social organizations in environmental protection.
h) Describe fecundity.

Q.3 Answer the following. (Any Three) **12**

a) Write a note on concept of productivity and its types.
b) Write note on taiga ecosystem and give examples.
c) Explain in detail concept of succession with example.
d) Write a note on degradation of natural resources

Q.4 Answer the following. (Any Two) **12**

a) Explain in detail concept of hunting and gathering and its environmental impact.
b) Describe in detail sustainable development and its importance.
c) Explain in detail river ecosystem and its characteristics.

Q.5 Answer the following. (Any Two) **12**

a) Write a note on environmental awareness and action through environmental education.
b) Discuss concepts of ecotone and edge effect in detail
c) Write a note on Desert ecosystem in detail with examples.

Seat No.	

Set P

M.Sc. (Environmental Science) (Semester - I) (New) (NEP CBCS)
Examination: March/April - 2026
Environmental Chemistry & Instrumentation techniques (2328102)

Day & Date: Monday, 20-04-2026 Max. Marks: 60
Time: 03:00 PM To 05:30 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative. (MCQ) **08**

1) The pH of neutral water is _____.
   a) 1 b) 7
   c) 10 d) 14

2) What is the molecular weight of water (H_2O)?
   a) 18 g/mol b) 16 g/mol
   c) 10 g/mol d) 14 g/mol

3) Which gas is primarily responsible for ozone depletion?
   a) Methane b) CFCs
   c) Carbon dioxide d) Nitrogen dioxide

4) The chemical property of soil affected by modern agriculture is _____.
   a) pH b) Nutrient level
   c) Both a and b d) None of the above

5) What is the main pollutant in photochemical smog?
   a) SO_2 b) NO_2
   c) O_3 d) CO_2

6) Which of these is a heavy metal pollutant?
   a) Lead b) Oxygen
   c) Nitrogen d) Hydrogen

7) Gravimetry is based on: _____.
   a) Volume measurement b) Weight measurement
   c) Gas analysis d) Light absorption

8) Flame spectrometry is used to analyze: _____.
   a) Metals b) Organic compounds
   c) Polymers d) pH levels

B) Fill in the blanks OR Write True/False. **04**

1) Soil contains both _____ and _____ components.
2) Oxygen is an inorganic gaseous pollutant.
3) The chemical demand for oxygen in water is measured as _____.
4) UV- Vis spectrophotometry is used for air quality analysis.

Q.2 Answer the following. (Any Six) **12**

a) Define stoichiometry.
b) What are hydrocarbons? Give examples.
c) Name two atmospheric pollutants and their sources.
d) What is chemical equilibrium?
e) Name one technique to measure dissolved oxygen.
f) What is the role of phosphorus in soil?
g) List two sources of water pollution.
h) What is X-ray diffraction?

Q.3 Answer the following. (Any Three) **12**

a) Discuss adsorption in soil.
b) Explain the importance of titrimetric analysis in environmental monitoring.
c) Name and describe two types of chromatography.
d) How is COD measured in water?

Q.4 Answer the following. (Any Two) **12**

a) Write a note on the Nernst distribution law.
b) What is ozone? Explain its importance.
c) Discuss the sources of soil contamination.

Q.5 Answer the following. (Any Two) **12**

a) Explain the chemistry of photochemical smog.
b) Discuss the principle of flame spectrometry.
c) Describe the basic components of soil.

Seat No.	

Set P

M.Sc. (Environmental Science) (Semester - I) (New) (NEP CBCS)
Examination: March/April – 2026
Current Environmental Issues and Problems of India (2328107)

Day & Date: Wednesday, 22-04-2026 Max. Marks: 60
Time: 03:00 PM To 05:30 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative. (MCQ) 08

1) Which of the following is the main cause of desertification?
   a) Overgrazing b) Mining
   c) Irrigation d) Plantation

2) Regarding Waste Management Techniques, Palletisation means _____.
   a) Process of adding microorganisms to consume spilled oil
   b) Processing of municipal waste to produce RDF
   c) The process of recycling organic products under anaerobic condition
   d) Removal of toxic layer from topsoil

3) Ground water characteristics has to be monitored at least once in a _____ till design span.
   a) Week b) Month
   c) Day d) Quarter

4) In which of the following we can see fluctuation in the water level dramatically in different season?
   a) Coral reefs b) Brackish water
   c) Wetlands d) Deep oceans

5) India's total cyclone-prone area is _____ %.
   a) 15% b) 10%
   c) 8% d) 20%

6) Which environmental movement refers to as Greed Game Political Populism by the environmentalists?
   a) Narmada Bachao Andolan (NBA)
   b) Silent Valley Movement
   c) Appiko Movement
   d) Jungle Bachao Andolan

7) The BPL families acquire food grains, sugar and kerosene at _____ of the price than that to the APL families.
   a) Twice
   b) One-half
   c) One-third
   d) One-fourth

8) Farmer's tractor adds to the carbon footprint of food because _____.
   a) It's green
   b) it makes a lot of noise
   c) It burns fossil fuel travelling back and forth over the fields
   d) Trench method

B) Fill in the blank: **04**

1) Excessive release of carbon dioxide in the atmosphere is the cause of _____ Effect which produces global warming.
2) One carbon credit is accepted as equivalent to _____ of carbon dioxide.
3) Least polluting fuel for vehicles is _____.
4) _____ is one of the twelve megadiversity centers.

Q.2 Answer the following. (Any Six) **12**

a) Explain Global Warming and its effects.
b) Write on population explosion and resource crunch.
c) 3 Discuss clean development mechanism.
d) Briefly discuss Dams and displacement issues.
e) Discuss the citizen participation in Environmental decisions.
f) Write on Tehri Dam.
g) Write the role of E environment as core part of sustainability
h) What is International Environmental Governances? Explain it.

Q.3 Answer the following. (Any Three) **12**

a) Discuss the water crises and future conflicts.
b) Discuss the industrial and vehicular air pollution.
c) Explain briefly citizen participation in environmental decision. Discuss the Wetland Development Programme.
d) Describe ecological and carbon footprint calculations.

Q.4 Answer the following. (Any Two) **12**

a) Which is genetically modified organism, Discuss the food crises and population.
b) Discuss carbon emission and its failure targets.
c) Discuss the disaster management with plan, implementation and strategies.

Q.5 Answer the following. (Any Two) **12**

a) Discuss the new approaches in human development of mitigating environmental issues
b) Discuss Global environmental issues and emphasis on E-waste.
c) Write on solid waste, draughts and flood.

Seat No.	

Set **P**

M.Sc. (Environmental Science) (Semester - I) (New) (NEP CBCS)
Examination: March/April – 2026
Biodiversity and Conservation (2328108)

Day & Date: Wednesday, 22-04-2026 Max. Marks: 60
Time: 03:00 PM To 05:30 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative. (MCQ) **08**

1) Which of the following an abiotic component?
   a) Light b) Plants
   c) Planktons d) Animals

2) Which organism has become extinct in the Galapagos Islands?
   a) Goats b) Birds
   c) Abingdon tortoise d) Herbs

3) Which one of the following is not included under in-situ conservation?
   a) Wild-life Sanctuary b) Botanical garden
   c) Biosphere Reserve d) National Park

4) The dodo is _____.
   a) an extinct bird b) a rare bird
   c) an endangered bird d) none of the above

5) Biodiversity refers to _____.
   a) The variety of genetic traits in a population
   b) The variety of species and ecosystems in a region
   c) The total number of individuals in an ecosystem
   d) The variety of physical environments in an area

6) For many groups of animals or plants, which is the most well-known pattern in diversity?
   a) Latitudinal gradient b) Longitudinal gradient
   c) Aquatic gradient d) Meridian gradient

7) Which of the following is a direct threat to biodiversity?
   a) Sustainable development b) Habitat preservation
   c) Pollution d) Ecotourism

8) The loss of a species from a particular area but not from the entire planet is known as _____.
   a) Extinction b) Endemism
   c) Biodiversity hotspot d) Extirpation

B) Write True /False: **04**

1) Native species that migrate deliberately or accidentally to an ecosystem.
2) Gametes of threatened species are preserved by cryopreservation techniques.
3) Gamma diversity describes the species diversity within a community at a small scale.
4) Tropical regions receive more solar energy than temperate regions.

Q.2 Answer the following. (Any Six) **12**

a) What is Gamma diversity?
b) Write note on gene pool.
c) Write Importance of Sacred groves.
d) Write note on Project Rhino.
e) Write short note on desertification.
f) Write note on habitat loss.
g) Explain Soil biodiversity.
h) Define Biodiversity.

Q.3 Answer the following. (Any Three) **12**

a) Explain level of biological organization.
b) How human interference is responsible for habitat destruction?
c) Write note on biopiracy.
d) Write impact of climate change on biodiversity.

Q.4 Answer the following. (Any Two) **12**

a) Explain Major Forest Types in India.
b) Explain how disturbance affects species diversity.
c) Elaborate strategies for biodiversity conservation.

Q.5 Answer the following. (Any Two) **12**

a) What is REDD Explain in detail?
b) Write detail note on human & wildlife conflicts.
c) Explain International conventions on biodiversity.

SLR-PI-6

Seat No.	

Set P

M.Sc. (Environmental Science) (Semester - I) (New) (NEP CBCS)
Examination: March/April – 2026
Research Methodology (2328103)

Day & Date: Friday, 24-04-2026 Max. Marks: 60
Time: 03:00 PM To 05:30 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative. (MCQ) **08**

1) Which of the following is a stage in report preparation?
   a) Data encryption
   b) Evaluation of the final draft
   c) Statistical analysis
   d) Survey distribution

2) What is a key characteristic of a good research proposal?
   a) Subjective interpretation b) Lack of structure
   c) Clear objectives d) Ambiguous methodology

3) What is the purpose of footnotes in scientific writing?
   a) To provide additional explanations
   b) To list all references
   c) To summarize the document
   d) To proofread the content

4) Which of the following is NOT part of a scientific manuscript?
   a) Abstract b) Methods
   c) Bibliography d) Resume

5) Which checklist item is critical for editing the final draft?
   a) Adding footnotes randomly
   b) Ensuring proper citations
   c) Ignoring grammatical errors
   d) Skipping document formatting

6) What is plagiarism?
   a) Unauthorized reproduction of data
   b) Original writing
   c) Ethical citation of references
   d) Use of unpublished data with permission

7) Which intellectual property right is used for protecting inventions?
   a) Copyright b) Trademark
   c) Patent d) Geographical indicator

8) Which document provides a summary of a research study?
   a) Thesis b) Abstract
   c) Manuscript d) Bibliography

B) Fill in the blanks OR Write True/False: **04**

1) The _____ section of a research paper summarizes the entire study in a concise manner.
2) The primary goal of research is to find answers to _____.
3) Spectrophotometry is used to measure the _____ of light absorbed by a sample.
4) Bibliographies are lists of _____ referred to in a research work.

Q.2 Answer the following. (Any Six) **12**

a) What is meant by comparative research?
b) Define the term “case study” in research methodology.
c) Define scientific research and its purpose?
d) What is the significance of formulating objectives in research?
e) Name two scientific databases used in environmental research
f) What is the purpose of a research abstract?
g) What is bibliographic compilation?
h) What is the importance of a research proposal?

Q.3 Answer the following. (Any Three) **12**

a) Define research report and mention two characteristics of a good research report?
b) What are the basic elements of research methodology?
c) What is meant by a "research problem"?
d) Discuss the process of hypothesis formulation in environmental research?

Q.4 Answer the following. (Any Two) **12**

a) What is the importance of research design in environmental studies?
b) Differentiate between observational and experimental research methods?
c) Explain the Comparative Research Method with an example from environmental science?

Q.5 Answer the following. (Any Two) **12**

a) Elaborate on the different types of research method (survey, observation, case study, historical, experimental, and comparative) used in environmental science?
b) Explain the significance of scientific writing and documentation in environmental research?
c) Explain the challenges and solutions in conducting field surveys for water quality analysis?

Seat No.	

Set P

M.Sc. (Environmental Science) (Semester - II) (New) (NEP CBCS)
Examination: March/April - 2026
Water and Waste water Treatment Technology (2328201)

Day & Date: Thursday, 16-04-2026 Max. Marks: 60
Time: 11:00 AM To 01:30 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative. **08**

1) Which of the following plants treats industrial effluents collectively from multiple industries?
   a) STP b) ETP
   c) CETP d) WTP

2) The main purpose of a Sewage Treatment Plant (STP) is ____.
   a) Treat drinking water
   b) Treat wastewater from households
   c) Manufacture chemicals
   d) Remove heavy metals from drinking water

3) Which method is NOT used for forecasting population?
   a) Arithmetical progression b) Geometrical progression
   c) Logistic method d) Statistical regression

4) In chemical treatment, flocculation refers to ____.
   a) Growth of bacteria
   b) Formation of large aggregates from small particles
   c) Filtration
   d) Dissolution of metals

5) The primary purpose of UV radiation in water treatment is ____.
   a) To remove heavy metals b) To increase hardness
   c) To reduce sludge d) To kill pathogens

6) A device used to remove large floating objects from wastewater is ____.
   a) Clarifier b) Grit chamber
   c) Bar screen d) Skimming tank

7) In an Activated Sludge Process, the biological activity mainly occurs in ____.
   a) Aerobic conditions b) Anaerobic conditions
   c) Dry conditions d) Sterile conditions

8) The Root Zone Bed Technology is primarily used for ____.
   a) Chemical coagulation
   b) Advanced oxidation
   c) Natural biological treatment
   d) Chlorination

B) Fill in the blanks OR write True/ False. **04**

1) Effluent Treatment Plants (ETP) are typically used to treat _____ wastewater.
2) The process that helps formed flocs to grow larger and settle better is called _____.
3) Root Zone Bed Technology uses _____ plants for treating wastewater naturally.
4) Reverse Osmosis (RO) is a type of _____ filtration used in water purification.

Q.2 Answer the following. (Any Six) **12**

a) Define domestic water consumption.
b) What is the significance of BIS standards in drinking water quality?
c) What is a Water Treatment Plant (WTP)?
d) Define coagulation in water treatment.
e) What is a skimming tank used for?
f) What is Rotatory Biological Contactor?
g) What is disinfection in water treatment?
h) Expand UASB and mention its use.

Q.3 Answer the following. (Any Three) **12**

a) Write a short note on the components and functions of an Effluent Treatment Plant (ETP).
b) What is bioremediation? Explain how it is used in sludge management.
c) Explain the process and applications of Wet Air Oxidation.
d) List and describe the methods of sludge treatment and disposal.

Q.4 Answer the following. (Any Two) **12**

a) Explain different types of water consumption in domestic, institutional, and industrial sectors.
b) Explain the working and importance of Sewage Treatment Plant (STP) with neat diagrams.
c) Write detailed notes on septic tank, Imhoff tank, and Root Zone Bed Technology for wastewater treatment.

Q.5 Answer the following. (Any Two) **12**

a) Discuss the anaerobic biological treatment methods including Trickling Filters and Rotatory Biological Contactors (RBCs).
b) Describe membrane filtration techniques like Microfiltration, Ultrafiltration, Nanofiltration, and Reverse Osmosis with applications.
c) Discuss the methods of wastewater discharge on land, river, and ocean with environmental considerations.

Seat No.	

Set **P**

M.Sc. (Environmental Science) (Semester - II) (New) (NEP CBCS)
Examination: March/April – 2026
Remote Sensing, GIS, GPS in Environmental Science (2328202)

Day & Date: Saturday, 18-04-2026 Max. Marks: 60
Time: 11:00 AM To 01:30 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative. (MCQ) 08

1) Remote sensing uses which of the following waves in its procedure?
   a) Electric field b) Sonar waves
   c) Gamma-rays d) Electromagnetic waves

2) Which of the following is not a principle of remote sensing?
   a) Interaction of energy with the satellite
   b) Electromagnetic energy
   c) Electromagnetic spectrum
   d) Interaction of energy with the atmosphere

3) Which among the following waves is having less wavelength range?
   a) 0.03mm b) 0.03nm
   c) 0.03m d) 0.03km

4) Which statement is not correct for a satellite in polar orbit?
   a) We can imagine both ascending and descending passes.
   b) The satellite will cover the entire surface of the earth after a certain period.
   c) The satellite has an inclination angle close to 90 degrees.
   d) The coverage is best too close to the equator.

5) Nominal level of measurement refers to: ____.
   a) Measurable distances b) Categories without order
   c) Ordered categories d) Equal intervals

6) Which of the following is an open-source GIS software?
   a) ArcGIS b) ERDAS
   c) QGIS d) IDRISI

7) The vector data model represents data using ____.
   a) Pixels b) Nodes, arcs, and polygons
   c) Continuous surfaces d) Cells

8) IRNSS stands for: ____.
   a) Indian Remote Navigation Satellite System
   b) Indian Regional Navigation Satellite System
   c) International Regional Navigation Satellite System
   d) Indian Range Navigation Security System

B) Write True/False: **04**

1) Remote sensing involves gathering information about an object without physical contact
2) Sun-synchronous satellites pass over the same area at different times daily.
3) Nominal data has no order or ranking.
4) UAS applications are expanding into construction and delivery services.

Q.2 Answer the following. (Any Six) **12**

a) Define remote sensing.
b) Define photogrammetry.
c) What is nominal data?
d) Define UAS.
e) What is topology in GIS?
f) What is a raster data model?
g) Name two types of satellites used in remote sensing.
h) What is meant by spectral resolution.

Q.3 Answer the following. (Any Three) **12**

a) Explain the principles of remote sensing.
b) Write short notes on spatial and temporal resolution.
c) Describe image rectification and enhancement.
d) Differentiate between raster and vector data models.

Q.4 Answer the following. (Any Two) **12**

a) Discuss GIS applications in natural resource management.
b) Explain the working and components of GPS.
c) Explain the types and uses of photogrammetry product.

Q.5 Answer the following. (Any Two) **12**

a) Describe the process and importance of digital image classification.
b) Discuss the principles of photogrammetry with examples.
c) Explain the interaction between electromagnetic radiation and Earth's surface features.

SLR-PI-10

Seat No.	

Set P

M.Sc. (Environmental Science) (Semester - II) (New) (NEP CBCS)
Examination: March/April – 2026
Environmental Pollution and Management (2328208)

Day & Date: Tuesday, 21-04-2026 Max. Marks: 60
Time: 11:00 AM To 01:30 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative. (MCQ) **08**

1) Which of the following disasters is related to nuclear pollution?
   a) Bhopal Gas Tragedy b) Chernobyl Accident
   c) Deepwater Horizon Spill d) Minamata Disease

2) Which of the following is a primary air pollutant?
   a) Ozone (O_3) b) Sulphur dioxide (SO_2)
   c) Photochemical smog d) Peroxyacetyl nitrate (PAN)

3) Which chemical reaction is responsible for ozone formation at ground level?
   a) $CO + O_2 \rightarrow CO_2$ b) $NO_2 \rightarrow NO + O$ (sunlight)
   c) $H_2O + CO_2 \rightarrow H_2CO_3$ d) $CH_4 + O_2 \rightarrow CO + H_2O$

4) Biochemical Oxygen Demand (BOD) is a measure of: _____.
   a) pH level b) Organic matter in water
   c) Dissolved oxygen d) Hardness of water

5) Eutrophication in water bodies is caused by excess: _____.
   a) Lead and mercury b) Nitrates and phosphates
   c) Chlorine and fluoride d) Sulphates and carbonates

6) Excessive use of nitrogen fertilizers can lead to: _____.
   a) Alkalinity b) Salinity
   c) Nitrate pollution d) Decreased pH buffering

7) Which process reduces carbon dioxide in soil and improves its quality?
   a) Chlorination b) Carbon sequestration
   c) Oxidation d) Denitrification

8) Which of the following techniques is used to convert organic waste into compost?
   a) Landfilling b) Incineration
   c) Aerobic decomposition d) Electrolysis

B) True/False: **04**

1) Hiroshima & Nagasaki disaster occurred because of nuclear explosions.
2) PCB stands for polychlorinated biphenyls.
3) Oxygen is greenhouse gas.
4) Carbon monoxide (CO) is colourless, odourless gas that can be harmful when inhaled in large amounts.

Q.2 Answer the following. (Any Six) **12**

a) What is secondary air pollutant?
b) Which health effects caused by noise pollution?
c) Define phytoremediation.
d) Define bioaugmentation.
e) What is the sources of coal pollution?
f) What is soil alkalinity?
g) What is hazardous waste with examples?
h) Define nuclear pollution.

Q.3 Answer the following. (Any Three) **12**

a) What are air pollution indices? How they are useful?
b) Describe the methods of abatement & control of noise pollution.
c) Write a short note on the effect of thermal pollution on marine ecosystem.
d) Describe classification of e-waste & hazardous waste.

Q.4 Answer the following. (Any Two) **12**

a) Describe proper handling & disposal methods of e-waste & hazardous waste.
b) Explain various disposal methods for solid waste.
c) Explain the types & sources of radiation pollution.

Q.5 Answer the following. (Any Two) **12**

a) Discuss the type & sources of water pollution.
b) Discuss the effect of radiation pollution on human life & vegetation. Discuss one case study of nuclear pollution.
c) Effect of noise pollution on human health, it's standards & permissible limit.

Seat No.	

Set **P**

M.Sc. (Environmental Science) (Semester - II) (New) (NEP CBCS)
Examination: March/April - 2026
Environmental Law, Acts Ethics Policies (2328209)

Day & Date: Tuesday, 21-04-2026 Max. Marks: 60
Time: 11:00 AM To 01:30 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative. (MCQ) **08**

1) Section 25 of The Environment (Protection) Act, 1986 deals with _____.
   a) Government Analysts
   b) Power to make rules
   c) Bar of jurisdiction
   d) Protection of action taken in good faith

2) Which section empowers the Central Government to make rules relating to standards of quality in relation to air, water and soil?
   a) Section 4 b) Section 3
   c) Section 5 d) Section 6

3) Preamble of the National Green Tribunal Act, 2010 does not mention ____.
   a) The Stockholm Conference
   b) Rio Conference
   c) Johannesburg Conference
   d) Article 21 of the Indian Constitution

4) Which provision of the Wildlife Act deals with the declaration of a National Park?
   a) Section 35 A b) Section 35
   c) Section 36 d) None of these

5) Which of the following was not amended by the National Green Tribunal Act?
   a) The Forest Act
   b) The Wildlife Act
   c) The Biological Diversity Act
   d) The Water Act

6) Which of the following animals are found in the wild animals list under the Wildlife Protection Act in India?
   a) Chimpanzee b) Gorilla
   c) Cheetah d) Snow Leopard

7) What is the full form of NGCP?
   a) National Green Corridor Program
   b) National Green Corridor Policy
   c) Natural Green Corridor Program
   d) Natural Green Corridor Policy

8) The Indian Forest Act, 1927 establishes how many categories of forests?
   a) 2 b) 3
   c) 4 d) 5

B) Write True/False: **04**

1) Environment (Protection) Act, 1986: The Act was last amended in 1991.
2) Renewable Energy Act 2015 this act in India aims to promote the use of renewable energy sources.
3) An ethical dilemma is a situation where one must choose between two or more actions, none of which are completely morally justifiable.
4) National Forest Policy, 1988 protects endangered species and wildlife habitats in India.

Q.2 Answer the following. (Any Six) **12**

a) Explain Article 58A.
b) Write Conservation Acts.
c) Write note on Kyoto Protocol.
d) Explain Basal Convention.
e) Write note on Ramsar Convention.
f) Write in brief concept of Environmental Ethics.
g) Explain Net zero mission.
h) Explain carbon neutrality.

Q.3 Answer the following. (Any Three) **12**

a) Explain Hazardous waste management and handling rules.
b) Explain E-waste regulation application.
c) Write note on the Environment (Protection) Act, 1986.
d) Explain Public Interest Litigation (PIL).

Q.4 Answer the following. (Any Two) **12**

a) Explain E-Waste management rules Consent applications and forms.
b) Write note on National Water Policy.
c) Write note on National Green Tribunal Act, 2010.

Q.5 Answer the following. (Any Two) **12**

a) Write role of UN authorities in protection of Global Environment.
b) Explain Ethical theories applied to the Environment.
c) Explain the Air (Prevention and Control of Pollution) Act, 1981.

Seat No.	

Set **P**

M.Sc. (Environmental Science) (Semester - III) (New) (NEP CBCS)
Examination: March/April – 2026
Environmental Microbiology, Biotechnology & Nanotechnology (2328301)

Day & Date: Friday, 17-04-2026 Max. Marks: 60
Time: 11:00 AM To 01:30 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative. (MCQ) **08**

1) Who is known as the "Father of Microbiology"?
   a) Louis Pasteur b) Robert Koch
   c) Anton van Leeuwenhoek d) Joseph Lister

2) Flagella help in _____.
   a) Photosynthesis b) Movement
   c) Respiration d) Sporulation

3) Psychrophiles are microorganisms that grow best in _____.
   a) Hot springs b) Arctic regions
   c) Desert d) Deep Sea vents

4) Biofilms are _____.
   a) Free-living bacteria
   b) Surface-associated microbial communities
   c) Dead cell aggregates
   d) Viral colonies

5) Plasmid is an example of a _____.
   a) Cloning vector b) Enzyme
   c) Protein d) Nucleotide

6) Bioremediation refers to _____.
   a) Genetic modification
   b) Use of living organisms to clean pollutants
   c) Waste storage
   d) Chemical detoxification

7) Nanotechnology deals with materials having size in the range of _____.
   a) 1-100 nm b) 100-1000 nm
   c) 1-10 μm d) 1-100 μm

8) Graphene is _____.
   a) A 3D carbon crystal
   b) A single layer of carbon atoms
   c) A metal oxide
   d) A polymer

B) Fill in the blanks: **04**

1) _____ are viruses that infect bacteria.
2) Bacterial flagella are used for _____.
3) Microorganisms that thrive at high temperatures are known as _____.
4) _____ uses plants to remove or detoxify pollutants.

Q.2 Answer the following. (Any Six) **12**

a) Define microbiology.
b) What are bacteriophages?
c) Define culture medium.
d) What is binary fission?
e) Define virology.
f) What is geomicrobiology?
g) What is a biofilm?
h) Define nutrient cycling.

Q.3 Answer the following. (Any Three) **12**

a) Explain the germ theory of fermentation and disease with examples.
b) Differentiate between Gram-positive and Gram-negative bacteria.
c) Describe the concept and applications of GMOs and GEMs.
d) Define bioremediation. Explain its types and applications.

Q.4 Answer the following. (Any Two) **12**

a) Describe the classification and general characteristics of microorganisms- bacteria, fungi, algae, protozoa, and viruses.
b) Discuss the applications of microbiology in environmental science and industry.
c) Explain the nitrogen cycle and carbon cycle mediated by microbes.

Q.5 Answer the following. (Any Two) **12**

a) Describe the composition, diversity, and importance of soil microflora.
b) Explain the structure of DNA and RNA and their biological significance.
c) Explain the process of phytoremediation and its types - phytoextraction, phytostabilization, and rhizofiltration.

SLR-PI-13

Seat No.	

Set P

M.Sc. (Environmental Science) (Semester - III) (New) (NEP CBCS)
Examination: March/April - 2026
Statistical methods in Environmental Science (2328302)

Day & Date: Monday, 20-04-2026 Max. Marks: 60
Time: 11:00 AM To 01:30 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative. (MCQ) **08**

1) What is the main purpose of sampling in statistics?
   a) To waste resources
   b) To increase error
   c) To estimate characteristics of a population
   d) To decrease variation

2) A population is ____.
   a) A small group of observations
   b) The group you want to generalize to
   c) Always infinite
   d) Not related to samples

3) A biased sample leads to ____.
   a) Accurate results b) Valid conclusions
   c) Misleading results d) Increased reliability

4) The mean is also known as the ____.
   a) Middle value b) Average
   c) Most frequent value d) Range

5) In a negatively skewed distribution, the relationship is ____.
   a) Mean > Median > Mode b) Mean < Median < Mode
   c) Mean = Median = Mode d) Mode > Mean > Median

6) What is the probability of getting a 4 when rolling a fair die?
   a) 1/4 b) 1/6
   c) 1/2 d) 1/3

7) If a distribution is symmetrical, the skewness is ____.
   a) Positive b) Negative
   c) Zero d) Undefined

8) A flat-topped distribution is called ____.
   a) Leptokurtic b) Mesokurtic
   c) Platykurtic d) Skewed

B) Write True/False: **04**

1) Statistical sampling is used to study a population by examining a subset of it.
2) Skewness measures the symmetry of a distribution.
3) Probability values range from 0 to 1.
4) Sampling error can be completely eliminated.

Q.2 Answer the following. (Any Six) **12**

a) Find the mean of the data: 3, 4, 5, 7, 10.
b) Differentiate between qualitative and quantitative data.
c) Define range. Give example.
d) Find the mode of the data: 4, 4, 5, 6, 7, 4, 5.
e) What is the probability of getting a number less than 3 when a die is rolled?
f) What is a sampling frame?
g) Find the median of the data: 7, 3, 1, 4, 2.
h) Find the probability of getting a tail when a coin is flipped.

Q.3 Answer the following. (Any Three) **12**

a) Write a note on merits of sampling.
b) Write a note on concept and types of hypothesis.
c) Describe types of data in detail.
d) Discuss in detail multistage sampling with example.

Q.4 Answer the following. (Any Two) **12**

a) Describe Z test in detail with example.
b) Describe in detail mean and its types.
c) Explain the difference between histogram and bar chart with suitable diagrams.

Q.5 Answer the following. (Any Two) **12**

a) Describe Chi-Square test in detail with example.
b) Write a note on Correlation and its environmental applications.
c) Explain details about pie chart with suitable example and diagram.

SLR-PI-16

Seat No.	

Set P

M.Sc. (Environmental Science) (Semester - III) (New) (NEP CBCS)
Examination: March/April – 2026
Energy and Environment (2328308)

Day & Date: Wednesday, 22-04-2026 Max. Marks: 60
Time: 11:00 AM To 01:30 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative. (MCQ) **08**

1) The main source of energy for Earth's ecosystem is _____.
   a) Geothermal energy b) Tidal energy
   c) Solar energy d) Wind energy

2) The Earth's heat budget refers to _____.
   a) The heat stored in oceans
   b) The balance between incoming solar radiation and outgoing terrestrial radiation
   c) The amount of heat in the Earth's core
   d) The heat produced by fossil fuels

3) Fossil fuels are considered non-renewable because _____.
   a) They can be produced artificially
   b) They take millions of years to form
   c) They are abundant in nature
   d) They emit no CO

4) Oil shale is _____.
   a) A renewable energy source
   b) A sedimentary rock containing organic matter (kerogen)
   c) A type of coal
   d) A synthetic fuel

5) Energy conservation means _____.
   a) Reducing total energy production
   b) Using energy efficiently and reducing wastage
   c) Increasing energy imports
   d) Promoting fossil fuels

6) Sustainable energy strategy focuses on _____.
   a) Short-term benefits
   b) Long-term balance between energy needs and environmental protection
   c) Only industrial growth
   d) Maximizing consumption

7) The largest energy consumer in the world (as of recent data) is _____.
   a) India b) China
   c) USA d) Russia

8) India's main source of commercial energy is _____.
   a) Biomass b) Coal
   c) Solar energy d) Wind energy

B) Fill in the blanks OR write true/false. **04**

1) Energy obtained directly from natural resources is called _____.
2) The main component of natural gas is _____.
3) The act of using energy efficiently to reduce wastage is known as _____.
4) The largest contributor to India's renewable energy capacity is _____.

Q.2 Answer the following. (Any Six) **12**

a) What is meant by the term energy?
b) Mention any two forms of energy?
c) What are fossil fuels?
d) Define oil shale.
e) Define sustainable energy.
f) Define energy transformation.
g) What is energy use pattern?
h) What is IREDA and what is its function?

Q.3 Answer the following. (Any Three) **12**

a) Explain the heat budget of the Earth and its importance in maintaining climate balance.
b) Write a short note on natural gas and its uses.
c) Discuss the principles of energy management and conservation.
d) Explain the renewable energy potential in India.

Q.4 Answer the following. (Any Two) **12**

a) Discuss the various forms of energy and their environmental significance.
b) Discuss the principle, working, and potential of wind energy as a renewable source.
c) Describe the sustainable energy strategy and its relevance to global environmental challenges.

Q.5 Answer the following. (Any Two) **12**

a) Explain the major sources of greenhouse gas emissions from the energy sector and their impacts.
b) Write a detailed note on the role of public awareness and education in promoting energy conservation.
c) Discuss the importance of efficient energy use in minimizing environmental impacts.

Seat No.	

Set P

M.Sc. (Environmental Science) (Semester - IV) (New) (NEP CBCS)
Examination: March/April - 2026
Environmental Virology, toxicology and Bio-safety (2328401)

Day & Date: Thursday, 16-04-2026 Max. Marks: 60
Time: 03:00 PM To 05:30 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative. **08**

1) Which of the following phase determines the specificity of the virus?
   a) Uncoating b) Release
   c) Attachment d) Penetration

2) Which of the following toxicity can occur due to single exposure?
   a) Acute toxicity b) Sub-acute toxicity
   c) Sub-chronic toxicity d) Chronic toxicity

3) The LD50 is calculated from _____.
   a) aquantal dose-response curve
   b) a hormesis dose -response curve
   c) a graded dose-response curve
   d) a log-log dose-response curve

4) In a BSL-2 laboratory, what type of protective clothing is typically required for laboratory personnel?
   a) Lab coat and gloves
   b) Lab coat, gloves, and safety goggles
   c) Lab coat, gloves, safety goggles, and a face mask
   d) Lab coat, gloves, safety goggles, and a face shield

5) Which of the following RNA is present in most of the plant viruses?
   a) ssDNA b) ssRNA
   c) dsRNA d) dsDNA

6) Which of the following is true regarding BSL-3 laboratories?
   a) They are designed for routine clinical testing
   b) They involve high-risk pathogens with no available vaccines or treatments
   c) They do not require specific safety precautions
   d) They are the most common type of laboratory setting

7) What does TLV stands for in the context of industrial toxicology?
   a) The Least Viable Limit b) Toxicity & Lethality Value
   c) Threshold Limit Value d) Toxic Liquid volume

8) Which term is used to describe the immediate, short-term effects of exposure to a toxic substance?
   a) Local effects
   b) Systemic effects
   c) Chonic effects
   d) Acute effects

B) Fill in the blanks. **04**

1) _____ helps the virus bind to a cell surface and assists the penetration of the viral DNA or RNA into a suitable host cell.
2) _____ are substances that may increase your risk of developing cancer.
3) _____ is the study of harmful effects of toxic pollutants in ecosystems.
4) _____ is the discipline that addresses the safe handling and containment of infectious microorganisms and hazardous biological materials.

Q.2 Answer the following. (Any Six) **12**

a) Write Characteristics of Viruses.
b) Define toxicodynamics.
c) Write short note on Biotransformation.
d) What are the symptoms of heavy metal poisoning?
e) Explain LD 50.
f) Write note on Complex symmetry in viruses.
g) What is Biosecurity?
h) What is antagonism in toxicology.

Q.3 Answer the following. (Any Three) **12**

a) Write Economic importance of viruses: Advantages
b) What are the alternatives to animal tests.
c) Write Economic disadvantages of viruses with example.
d) What is a teratogen?

Q.4 Answer the following. (Any Two) **12**

a) Write history of Viruses.
b) Explain In Vitro Testing method in toxicology.
c) Difference between synergism & antagonism.

Q.5 Answer the following. (Any Two) **12**

a) Explain Infrastructure principles of biosafety.
b) Difference between Plant and Animal Viruses.
c) What is Mutagens explain in detail.

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Seat No.	

Set P

M.Sc. (Environmental Science) (Semester - IV) (New) (NEP CBCS)
Examination: March/April - 2026
Environmental Impact Assessment, Audit and ESG (2328402)

Day & Date: Saturday, 18-04-2026 Max. Marks: 60
Time: 03:00 PM To 05:30 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative. (MCQ) **08**

1) A reversible impact is one that: ____.
   a) Can be completely undone after project closure
   b) Cannot be restored
   c) Has positive economic benefits
   d) Happens during public consultation

2) Baseline data in EIA refers to: ____.
   a) Data collected after the project is operational
   b) Historical environmental data
   c) Data on existing environmental conditions before a project
   d) Future projections of environmental data

3) What is an advantage of public participation in EIA?
   a) Lengthy decision-making
   b) Building community trust
   c) High project implementation costs
   d) Reduced project acceptance

4) Environmental audit mainly assesses: ____.
   a) Financial performance
   b) Environmental performance and compliance
   c) Legal rights of industries
   d) Political environment

5) Which ISO standard deals with Environmental Management Systems?
   a) ISO 9000 b) ISO 14000
   c) ISO 18000 d) ISO 20000

6) Which of the following is a primary impact?
   a) Increase in air pollution due to vehicle emissions
   b) Employment generated by a new factory
   c) Rise in local business after highway construction
   d) Public awareness raised through protests

7) The pre-audit process in Environmental Auditing includes: ____.
   a) Monitoring the company's future profits
   b) Planning, organizing audit team, gathering information
   c) Only penalizing violations
   d) Approving construction projects

8) A Green Audit primarily focuses on: ____.
   a) Financial transactions
   b) Biodiversity and green practices on campus/industry
   c) Political campaigns
   d) Marketing practices

B) Fill in the blanks. **04**

1) _____accreditation is mandatory for EIA consultant organizations in India.
2) The phase of EIA where the impacts are forecasted before a project is implemented is called _____.
3) _____ methods involve using expert judgment without formal structure for impact identification.
4) _____ data refers to information collected before a project is implemented to assess impacts.

Q.2 Answer the following. (Any Six) **12**

a) What are the phases of the EIA process?
b) State two advantages of public participation?
c) State any two major limitations of EIA?
d) Define Terms of Reference (ToR) in EIA?
e) Differentiate between Primary and Secondary impacts?
f) What is a Checklist Method in impact identification?
g) Define Environmental Management Plan (EMP).
h) Define Environmental Audit.

Q.3 Answer the following. (Any Three) **12**

a) Explain any two Impact Identification Methods used in EIA?
b) List major components considered during the prediction and assessment of impacts in EIA?
c) Write a short note on ISO 14000 Standards?
d) What are Green and Energy Audits?

Q.4 Answer the following. (Any Two) **12**

a) Explain the goals and objectives of Environmental Impact Assessment (EIA) in the context of sustainable development?
b) Discuss the major limitations of Environmental Impact Assessment (EIA) in project planning?
c) Explain the concept of Cost-Benefit Analysis (CBA) in EIA and its significance in decision-making for development projects?

Q.5 Answer the following. (Any Two) **12**

a) Discuss the concept of Eco-labelling and its role in promoting environmental sustainability. How does Eco-labelling affect consumer behavior and industry practices?

b) Discuss the advantages and disadvantages of public participation in the EIA process. Provide real-world examples where public participation improved project outcomes.

c) Describe the process and importance of pre- and post-environmental audits. How do these audits contribute to the continuous improvement of environmental practices?

Seat No.	

Set P

M.Sc. (Environmental Science) (Semester - IV) (New) (NEP CBCS)
Examination: March/April - 2026
Natural Resources Management (2328406)

Day & Date: Tuesday, 21-04-2026 Max. Marks: 60
Time: 03:00 PM To 05:30 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative. **08**

1) What is the full form of CAZRI?
   a) Central Agricultural Zone Research Institute
   b) Central Arid Zone Research Institute
   c) Centre for Arid Zone Resource Investigation
   d) Central Authority for Zonal Resource Integration

2) Which of the following is a method of soil conservation?
   a) Deforestation b) Contour ploughing
   c) Overgrazing d) Mining

3) Which of the following helps reduce wind erosion?
   a) Strip cropping b) Windbreaks or shelterbelts
   c) Flood irrigation d) Intensive tillage

4) What is the ecological approach in resource management mainly concerned with?
   a) Maximizing economic returns
   b) Maintaining ecosystem balance and biodiversity
   c) Promoting tourism
   d) Building industries

5) What is the significance of integrated resource management strategies?
   a) To focus only on economic benefits
   b) To manage resources through a single approach
   c) To combine ecological, economic, and social approaches for sustainable use
   d) To promote mining and industrial development

6) Which Indian state is famous for its sacred groves as a form of traditional resource conservation?
   a) Rajasthan b) Kerala
   c) Meghalaya d) Gujarat

7) Which Indian movement opposed the mining of bauxite in tribal areas?
   a) Chipko Movement
   b) Narmada Bachao Andolan
   c) Gandhamardan Movement
   d) Jungle Bachao Andolan

8) Which of the following activities is likely to degrade land quality?
   a) Crop rotation
   b) Mulching
   c) Overgrazing
   d) Organic farming

B) True/False. **04**

1) Marine resources are natural resources.
2) Mining is an important factor behind deforestation.
3) The economic approach to resource management always ensures ecological balance.
4) Integrated resource management focuses on balancing ecological, economic & social factors.

Q.2 Answer the following. (Any Six) **12**

a) What are mineral resources?
b) What is Exhaustible & In-exhaustible resources with an example?
c) Define hydropower energy.
d) What is resource economics?
e) What is Resource Accounting?
f) Define Red data book.
g) What is nutrient budget?
h) What is rangelands?

Q.3 Answer the following. (Any Three) **12**

a) Write a short note on Geothermal energy.
b) Explain Natural Resource Management & Sustainable Livelihoods.
c) Describe causes of land degradation.
d) What is social forestry? How is it different from agroforestry?

Q.4 Answer the following. (Any Two) **12**

a) Explain the relationship between energy resources & industrial development.
b) Describe the role of national & international organizations in conservation & sustainable management of resources.
c) Give an account of marine farming of fishes & seaweeds with their advantages.

Q.5 Answer the following. (Any Two) **12**

a) Describe the relationship between natural resource & human survival.
b) Describe the role of traditional knowledge in sustainable management of natural resources.
c) Explain how to conserve endangered medicinal plants. What methods & strategies to adopt for conservation?

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Seat No.	

Set P

M.Sc. (Environmental Science) (Semester - IV) (New) (NEP CBCS)
Examination: March/April – 2026
Ecotourism (2328407)

Day & Date: Tuesday, 21-04-2026 Max. Marks: 60
Time: 03:00 PM To 05:30 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q.1 A) Choose correct alternative. (MCQ) **08**

1) Which of this best represents the intangible nature of tourism?
   a) Travel guide b) Physical souvenir
   c) Personal experience d) Transportation

2) One of the economic impacts of ecotourism is _____.
   a) resource depletion
   b) Foreign exchange earnings
   c) Increased pollution
   d) Cultural erosion

3) Visitor Impact Management (VIM) is used to: _____.
   a) Increase ticket prices
   b) Analyze the environmental effects of tourists
   c) Promote tour packages
   d) Design advertisements

4) Which of the following is not a type of ecotourism?
   a) Mangrove tourism b) Wildlife tourism
   c) Industrial tourism d) Wetland tourism

5) The main motivation for travel in ecotourism is _____.
   a) Shopping b) Business
   c) Nature and environment d) Adventure sport

6) Ecotourism certification programs help: _____.
   a) Promote luxury resorts
   b) Ensure environmental standards
   c) Increase foreign investment
   d) Build airports

7) Eco-development refers to: _____.
   a) Industrial expansion
   b) Nature-based sustainable development
   c) Mining policies
   d) Urbanization

8) The term LAC refers to _____.
   a) Least Affected Communities
   b) Limits of Acceptable Change
   c) Legal Allocation Committee
   d) None of the above

B) Write true/false. **04**

1) Ecotourism has no social impact.
   a) True
   b) False
2) Eco-labels help identify environmentally responsible tourism services.
   a) True
   b) False
3) Infrastructure development has no impact on hill station ecotourism.
   a) True
   b) False
4) Ecotourism evolved as a response to the negative impacts of mass tourism.
   a) True
   b) False

Q.2 Answer the following. (Any Six) **12**

a) What is travel motivation.
b) What is backwater tourism?
c) Write any two aims of ecotourism.
d) What do you mean by eco-labels?
e) State any two potentials for ecotourism in India.
f) State any two objectives of the World Ecotourism Summit.
g) Define ecological footprint analysis.
h) Mention two objectives of Visitor Impact Management (VIM).

Q.3 Answer the following. (Any Three) **12**

a) Describe the legal aspects of ecotourism in India.
b) What are ecotourism certification programs?
c) Explain the role of ecotourism management.
d) What is ecotourism management? Explain its significance.

Q.4 Answer the following. (Any Two) **12**

a) Analyze the future trends of tourism in India.
b) Describe the planning and management of health and wellness tourism.
c) Describe the National Action Plan 1992 and its importance in tourism.

Q.5 Answer the following. (Any Two) **12**

a) Explain the various components of ecotourism and methods of impact monitoring.
b) Discuss the concept of sustainable ecotourism and its implications.
c) Explain the social, economic, and cultural impacts of mass tourism.