

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations, July 2023 (Reappear)

Programme: M.Sc. (Environmental Sciences)

Session: 2022-23

Semester: 3rd

Max. Time: 3 Hours

Course Title: Environmental Policy and Law

Max. Marks: 70

Course Code: SIAS EVS 01 03 13 C 4004

Instructions:

1. Question no. 1 has seven parts and students need to answer any four. Each part carries three and half Marks.

2. Question no. 2 to 5 have three parts and students need to answer any two parts of each question. Each part carries seven marks.

Q 1. Write a short note on the following: (4X3.5=14)

- a) Precautionary Principle
- b) Sustainable development
- c) Earth Summit
- d) UNFCCC
- e) The Water (Preventions and Control of Pollution) Act
- f) Coastal Regulation Zone (CRZ) Notification, 1991
- g) Forest Conservation Act, 1980

Q 2. (2X7=14)

- a) What are the constitutional provisions of Constitution of India regarding environment?
- b) Discuss the General Principle in Environmental Law- Polluter Pays Principle?
- c) Discuss the major international efforts to protect the global atmospheric pollution.

Q3. (2X7=14)

- a) Discuss the Ramsar Convention. What are the criteria for any wetland to be designated as Ramsar site?
- b) Write an essay on creation of UNEP and discuss its role in environment protection.
- c) Discuss the key points under Montreal Protocol.

Q 4. (2X7=14)

- a) What are the main provisions under Noise Pollution (Regulation and Control) Rules, 2000?
- b) Discuss the National Water Policy, 2002.
- c) Write down the functions of central board under the Water (Preventions and Control of Pollution) Act, 1974?

Q 5. (2X7=14)

- a) Discuss the main objectives of Biological Diversity Act (2002).
- b) What are the main objectives of National Forest Policy (1988)?
- c) What are the main provisions in "Wildlife Protection Act" for the protection of wildlife?

CENTRAL UNIVERSITY OF FINLAND

Final examination in the field of...

Organization: M.Sc. Environmental Science
Department: Environmental Science
Course: Environmental Science
Lecturer: Dr. J. J. J. J.

Question 1: The main goal of the...
and will be...
Question 2: The main goal of the...
and will be...

- Q 1. The main goal of the... is to...
- a) Sustainable development
 - b) Environmental protection
 - c) Environmental protection
 - d) Environmental protection
- Q 2. The main goal of the... is to...
- a) Sustainable development
 - b) Environmental protection
 - c) Environmental protection
 - d) Environmental protection

- Q 3. The main goal of the... is to...
- a) Sustainable development
 - b) Environmental protection
 - c) Environmental protection
 - d) Environmental protection
- Q 4. The main goal of the... is to...
- a) Sustainable development
 - b) Environmental protection
 - c) Environmental protection
 - d) Environmental protection

- Q 5. The main goal of the... is to...
- a) Sustainable development
 - b) Environmental protection
 - c) Environmental protection
 - d) Environmental protection
- Q 6. The main goal of the... is to...
- a) Sustainable development
 - b) Environmental protection
 - c) Environmental protection
 - d) Environmental protection

- Q 7. The main goal of the... is to...
- a) Sustainable development
 - b) Environmental protection
 - c) Environmental protection
 - d) Environmental protection

CENTRAL UNIVERSITY OF HARYANA

Second Semester Term End Examinations June 2023

Programme: M.Sc. (EVS)

Session: 2022-23

Semester: II

Max. Time: 3 Hours

Course Title: Environmental Pollution and Health

Max. Marks: 70

Course Code: SIAS EVS 01 02 03 GE 4004

Instructions:

1. Question no. 1 has seven parts and students are required to answer any four. Each part carries three and half Marks.
2. Question no. 2 to 5 have three parts and students are required to answer any two parts of each question. Each part carries seven marks.

Q 1. (4X3.5=14)

- a) Discuss some water borne diseases and its effects on humans?
- b) Write short note on environment health management?
- c) Explain gravity settling chamber used to control particulate emission with figure along with its advantages and disadvantages.
- d) Define air pollution. What are major the sources air pollution?
- e) Write short note on water quality standards for drinking purpose and domestic use as per BIS?
- f) What are vector borne diseases, discuss its transmission and control?
- g) Give an account of noise generated during Diwali. What would you suggest to reduce this nuisance?

Q 2. (2X7=14)

- a) Discuss the importance of indoor air quality and ventilation with its effect on human health?
- b) What are primary and secondary air pollutants? Discuss major sources of urban air pollution and effects of air pollutants on materials?
- c) What are national and international ambient air quality standards for monitoring air quality?

Q3. (2X7=14)

- a) Explain the point and non-point sources of water pollution and discuss the physico-chemical and biological effects of pollutants on aquatic ecosystem?
- b) Explain water borne diseases and infections, and their effects on human health in detail?
- c) Discuss various methods used for the purification of water.

Q 4.

(2X7=14)

- a) Briefly describe the different measures that can be adopted to control noise pollution?
- b) Tabulate the national standards for noise given by CPCB? Briefly describe the direct and indirect impact of noise pollution on human health?
- c) Define noise pollution. What are the different sources of noise pollution in a residential, commercial and industrial area?

Q 5.

(2X7=14)

- a) Briefly describe the impacts of flies, ticks and mites on human health.
- b) What is radiation pollution? Explain natural and anthropogenic sources of radiation and its biological effect?
- c) What do you understand by the terms bioaccumulation, biomagnifications and biotransformation? Explain the major sources of soil pollution and its effects.

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations, July 2023(Reappear)

Programme: M.Sc. (Environmental Sciences)

Session: 2022-23

Semester: 3rd

Max. Time: 3 Hours

Course Title: Environmental Microbiology

Max. Marks: 70

Course Code: SIAS EVS 01 03 06 DCEC 4004

Instructions:

1. Question no. 1 has seven parts and students need to answer any four. Each part carries three and half Marks.

2. Question no. 2 to 5 have three parts and students need to answer any two parts of each question. Each part carries seven marks.

Q 1. Write a short note on the following: (4X3.5=14)

- a) Biofilm
- b) Bioassay tests for toxicity evaluation
- c) Mineralization
- d) Bio fertilizers
- e) Food borne infection
- f) Microbial Enhanced Oil Recovery (MEOR)
- g) Bio surfactants

Q 2. (2X7=14)

- a) What is the role of microorganisms in waste water treatment? Explain.
- b) Define eutrophication. Discuss the major causes responsible for the eutrophication.
- c) What are the indicator microorganisms? Explain with the examples.

Q3. (2X7=14)

- a) What are the general characteristics and activities of microorganisms in surface soil?
- b) Explain the biological nitrogen-fixation.
- c) What is mycorrhiza? Discuss the environmental significance of mycorrhiza.

Q 4. (2X7=14)

- a) Discuss the role of microbial enzymes in food industry.
- b) What are the genetically modified (GM) foods? Explain their positive and negative aspects for environment.
- c) Discuss the Mycotoxins in food with reference to Aspergillus species.

Q 5. (2X7=14)

- a) What is the Bioremediation? Write down its principle, mechanism and types.
- b) Discuss the biodegradation of pesticides. Write down the factors affecting their degradation.
- c) What is Bio-hydrometallurgy? Explain with examples.

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations June 2023 (Reappear)

Programme: M.Sc. (Environmental Sciences)

Session: 2022-23

Semester: Third

Max. Time: 3 Hours

Course Title: Environmental Health and Toxicology

Max. Marks: 70

Course Code: SIAS EVS 01 03 14 C 4004

Instructions:

1. Question no. 1 has seven parts and students need to answer any four. Each part carries three and half Marks.
2. Question no. 2 to 5 have three parts and student needs to answer any two parts of each question. Each part carries seven marks.

Q 1. Write the note on the following: (4X3.5=14)

- a) Differentiate LD50 and LC50
- b) Teratogens
- c) Types of mutation
- d) Goiter
- e) Importance of Environmental Toxicology
- f) Endogenous Substances
- g) Itai-itai

Q 2. Discuss the following: (2X7=14)

- a) Transportation and Storage of toxicants
- b) Occurrence of toxicants and their Effects
- c) Excretion of toxicants

Q3. Explain the following: (2X7=14)

- a) Fluorosis
- b) Blackfoot disease
- c) Arsenicosis

Q 4. Write a note on the following: (2X7=14)

- a) Types, Mechanism and Characteristics of Biotransformation
- b) Activation of Xenobiotic
- c) Factors affecting biotransformation

Q 5. Discuss the following: (2X7=14)

- a) Mutagenicity
- b) Environmental Mutagen Testing
- c) DNA Damage and Repair Assays

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, June/July 2023

Programme: M.Sc. (Environmental Sciences)

Session: 2022-23

Semester: 4th

Max. Time: 3 Hours

Course Title: Research Methodology and Writing Skills

Max. Marks: 70

Course Code: SIAS EVS 01 04 17 C 4004

Instructions:

1. Question no. 1 has seven parts and students need to answer any four. Each part carries three and half Marks.
2. Question no. 2 to 5 have three parts and students need to answer any two parts of each question. Each part carries seven marks.

Q 1. Write a short note on (4X3.5=14)

- a) Primary and secondary data
- b) Problem distillation
- c) Questionnaire
- d) Probability and non-probability sampling
- e) t-test
- f) Chi-square test
- g) Bibliography

Q 2. (2X7=14)

- a) Define research. Elaborate objectives of research and its types with the help of suitable examples.
- b) Give an account on various steps involved in the research process.
- c) What are the important key factors in selection of a research topic? Elaborate significance of a research.

Q3. (2X7=14)

- a) Define a research problem. What are the criteria for selecting a research problem? What are the sources to know about a research problem?
- b) Define a sample. Discuss various strategies used for the sampling along with suitable examples for each.
- c) How to prepare standards? Give an account on samples digestion and analysis methods for soils samples.

Q 4. (2X7=14)

- a) What is the correlation and linear regression? How they are important in research?
- b) What is standard deviation? How it is measured? Write down its uses.
- c) Explain the diagrammatic and graphical representation of the data.

Q 5.

(2X7=14)

- a) Write down the major steps of report writing with brief discussion of each step.
- b) Discuss the citations and references in report writing. What are the popular styles of citations and references?
- c) Explain the copyright issues and plagiarism in report writing.

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations June/July 2023

Programme: M.Sc. (Environmental Science)

Session: 2022-23

Semester: II

Max. Time: 3hours

Course Title: Environmental Management And Impact Assessment

Max. Marks: 70

Course Code: SIAS EVS 01 02 09 C 4004

Instructions:

1. Question no. 1 has seven parts and students need to answer any four. Each part carries three and a half Marks.

2. Questions no. 2 to 5 have three parts and students need to answer any two parts of each question. Each part carries seven marks.

Q 1. (4X3.5=14)

- a) Describe the origin and aim of EIA
- b) Briefly explain the EIA Guidelines 1994
- c) Explain the environmental management system and quality management system
- d) Discuss the Life Cycle Assessment in EIA
- e) Discuss the benefits and future of EIA
- f) Discuss the significant Environmental Auditing.
- g) What are the socio-economic impact of hydropower projects in EIA

Q 2. (2X7=14)

- a) Discuss the details note on the ISO14000 and 14001.
- b) What are the concept and strategies of sustainable development in the EIA?
- c) Explain the process of the baseline study and impact identification in an EIA study.

Q3. (2X7=14)

- a) Describe in detail various impacts assessment methodologies in EIA
- b) Briefly discuss the role and composition of ECA and SEAC
- c) Discuss the various stages in the environmental clearance process.

Q 4. (2X7=14)

- a) Give the salient features of National Environmental Policies and guidelines
- b) Discuss the methodologies of environmental Auditing.
- c) Discuss the cost-benefit analysis

Q 5. (2X7=14)

- a) Explain the procedure of EIA of a river valley project
- b) What are the impacts of thermal power projects on socio-economic environments?
- c) Explain the procedure of EIA of an oil refinery.

Programme: M.Sc. (Environmental Sciences)

Session: 2023-24

Semester: Second

Max. Time: 3 Hours

Course Title: Instrumental Techniques for Environmental Analysis

Max. Marks: 70

Course Code: SIAS EVS 01 02 10 C 4004

Instructions:

1. Question no. 1 has seven parts and students need to answer any four. Each part carries three and half Marks.
2. Question no. 2 to 5 have three parts and student needs to answer any two parts of each question. Each part carries seven marks.

Q 1. Write the note on the following: (4X3.5=14)

- a) Concept of analytical method
- b) Titrimetry
- c) Nephelometry
- d) Electrophoresis
- e) Ion Exchange Chromatography
- f) Brightfield Microscope
- g) Phase Contrast Microscopy

Q 2. Discuss the following: (2X7=14)

- a) Sampling and Sample Storage Methods
- b) Colourimetry
- c) Gravimetry

Q3. Explain the following: (2X7=14)

- a) Atomic Absorption Spectrophotometry
- b) Fourier-Transform Infrared Spectroscopy
- c) X-Ray Diffraction

Q 4. Write on the following: (2X7=14)

- a) Paper and thin layer chromatography
- b) High Pressure Liquid Chromatography
- c) Gas liquid Chromatography

Q 5. Discuss on the following: (2X7=14)

- a) SEM
- b) Flow cytometry
- c) Transmission Electron Microscopy

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, June/July 2023

Programme: (Environmental Sciences)

Session: 2022-23

Semester: Second

Max. Time: 3 Hours

Course Title: Forest and Wildlife Ecology

Max. Marks: 70

Course Code: SIAS EVS 01 02 02 DCEC 4004

Instructions:

1. Question no. 1 has seven parts and students are required to answer any four. Each part carries three and half Marks.
2. Question no. 2 to 5 have three parts and student are required to answer any two parts of each question. Each part carries seven marks.

Q 1. (4X3.5=14)

- a) Agroforestry
- b) Eucalyptus dilemma
- c) Sustainable yield relation
- d) Silviculture
- e) Concept of wildlife
- f) National park
- g) Indian wildlife IUCN categories

Q 2. (2X7=14)

- a) Define agroforestry. What are prospects of agroforestry in India?
- b) Define forest. Give an account on roles on NGOs in managing forests of India.
- c) Discuss social forestry. How people's participation helps in forest ecosystem management.

Q3. (2X7=14)

- a) Discuss deforestation causing factors? How it is relates with climate change?
- d) What are principle and objectives of forest management? Discuss different techniques used for forest management.
- e) Define Biodiversity. What is the role of forest in sustaining biodiversity of any area?

Q 4. (2X7=14)

- a) Define wildlife. What are the roles of wildlife in nature? Discuss the factors influencing wildlife.
- b) Discuss about game farming. What are ethical problems related to game farming?
- c) Give an account on common flora and fauna of India.

Q5.

(2X7=14)

a) Write a brief note on the following?

I. Wildlife sanctuaries

II. Biosphere reserves

b) What is the objective of special projects for endangered species? Discuss about any of two special projects.

c) Write a brief note on the following:

I. Management of fire for wildlife conservation.

II. Animal cruelty: causes and prevention

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations, June/July 2023

Programme: M.Sc. (Environmental Sciences)

Session: 2022-23

Semester: 2nd

Max. Time: 3 Hours

Course Title: Environmental Chemistry

Max. Marks: 70

Course Code: SIAS EVS 01 02 07 C 4004

Instructions:

1. Question no. 1 has seven parts and students need to answer any four. Each part carries three and half Marks.
2. Question no. 2 to 5 have three parts and students need to answer any two parts of each question. Each part carries seven marks.

Q 1. Write a short note on (4X3.5=14)

- a) Radionuclide in water
- b) Stoichiometry
- c) Primary and Secondary air pollutants
- d) Method of control of SO₂
- e) Micronutrients in soil
- f) Hydrocarbons
- g) Chlorofluorocarbons

Q 2. (2X7=14)

- a) Find out the equilibrium concentration of fluoride ions in pure water caused by the dissociation of CaF₂. Express the answer in mol/L as well as in mg/L. (Solubility product, K_{sp} of equilibrium equation of CaF₂ dissociation is 3x10⁻¹¹ and atomic weight of fluorine is 19).
- b) What do you understand by carbonate system of natural water? Explain.
- c) What are the sources and consequences of water pollution?

Q3. (2X7=14)

- a) What is photochemical smog? Briefly explain the mechanism of formation of photochemical smog.
- b) Discuss the Oxygen and Ozone chemistry.
- c) Write down the effects of air pollutants on human beings, plants and materials.

Q 4. (2X7=14)

- a) What are the inorganic and organic components of soil? How do they affect the soil properties?
- b) What is the weathering of rocks? Explain the processes responsible for it.
- c) Discuss the NPK in soil.

Q 5.

(2X7=14)

- a) Discuss the chemical fertilizers. What are their environmental effects?
- b) Give a brief account of classification of pesticides, with examples. Briefly discuss the degradation of pesticides.
- c) Write down the principles of green chemistry.

CENTRAL UNIVERSITY OF HARYANA

Second Semester Term End Examinations June 2023

Programme: MSc Environmental Studies

Session: 2022-23

Semester: II

Max. Time: 3 Hours

Course Title: Solid and Hazardous Waste Management

Max. Marks: 70

Course Code: SIAS EVS 01 02 01 DCEC 4004

Instructions:

1. Question no. 1 has seven parts and students are required to answer any four. Each part carries three and half Marks.

2. Question no. 2 to 5 have three parts and students are required to answer any two parts of each question. Each part carries seven marks.

Q 1.

(4X3.5=14)

- a) Define E-wastes and discuss different sources of e-wastes?
- b) What is the definition of hazardous waste, and what are its sources?
- c) Give a detail account of color coding and type of container/ bags to be used for waste segregation & collection as per the Bio-Medical Waste Management Rules, 2016.
- d) What are responsibility of Producers, Importers and Brand owners given in the plastic waste management rules, 2016?
- e) Write short note on incineration of wastes?
- f) What are the various factors that affect the generation of waste?
- g) What are the risks associated with improper management of solid waste?

Q 2.

(2X7=14)

- a) What is the main purpose of waste processing? Could you explain some methods for reducing the volume and size of waste?
- b) Provide a brief overview of waste recycling, with a focus on the recycling of plastic waste.
- c) Write a detailed note on types and sources of solid waste.

Q3.

(2X7=14)

- a) Define composting. Explain various essential parameters required for composting process.
- b) What do you understand by landfill? Explain the major components of a landfill with a suitable diagram.

- c) Explain the duties of waste generators, local authorities and panchayats given in Solid waste Management, rules 2016.

Q 4.

(2X7=14)

- a) What are the principles and strategies for effective e-waste management?
- b) Write a detailed note on the management of radioactive wastes.
- c) What are the various methods that can be used for controlling, treating, and managing hazardous waste?

Q 5.

(2X7=14)

- a) What are the key provisions mentioned in the Hazardous and Other Waste (Management and Transboundary Movement) Rules, 2016, explain in detail?
- b) What are the important aspects covered in the Batteries (Management and Handling) Rules, 2010, including the amendments?
- c) What are the key provisions and objectives of The Bio-Medical Waste Management Rules, 2016 and how do they regulate the management of biomedical waste in India?