Programme: (Environmental Sciences)　　　　　Session: 2021-22
Semester: Fourth　　　　　　　　　　　　　　Max. Time: 3 Hours
Course Title: Forest and Wildlife Ecology　　　Max. Marks: 70
Course Code: SEES EVS 01 04 06 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)

　h) Eucalyptus dilemma

　i) Extension forestry

　j) Sustainable yield relation

　k) Deforestation

　l) Concept of wildlife

　m) Project tiger

　n) Indian wildlife IUCN categories

Q 2.　　　　　　　　　　　　　　　　　　　　　　　　(2X7=14)

　d) Define social forestry. Discuss *Eucalyptus* dilemma with the support of examples.

　e) Make a descriptive note on roles on NGOs in managing forests of India.

　f) How people's participation helps in forest ecosystem management.

Q3.　　　　　　　　　　　　　　　　　　　　　　　　(2X7=14)

　d) How deforestation affects forest ecosystems? How is it relates with climate change?

　e) Define yield. Make a descriptive note on sustainable yield relation in silviculture practices.

　f) Define forest. What is the role of forest in sustaining biodiversity of any area?

Q 4.　　　　　　　　　　　　　　　　　　　　　　　　(2X7=14)

　d) Describe the tools used for data collection and analysis of wildlife.

　e) Discuss about game farming. What are ethical problems related to game farming?
　f) What is the significance of habitat improvement in wild life?

Q 5.　　　　　　　　　　　　　　　　　　　　　　　　(2X7=14)

　d) Define NGO. What is the role of NGO's in wildlife and forest life?

　e) What are the objectives of special projects for endangered species? Discuss about any of two special projects.

　f) Write a brief note on the following:

I. Management of fire for wildlife conservation.

II. Animal cruelty: causes and prevention

CENTRAL UNIVERSITY OF HARYANA

Programme: M. Sc. (Environmental Sciences)   **Session: 2021-22**

Semester: III   **Max. Time: 3 Hours**

Course Title: Environmental Management and Impact Assessment **Max. Marks: 70**

Course Code: SEES EVS 01 03 10 C 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) What is EIA? Why is it needed?

 b) Write about the different types of EIA.

 c) What are the environmental impacts of mining projects?

 d) Write about environmental audit. Why is it needed?

 e) Explain cost benefit analysis.

 f) What are the underlying principles of Life cycle assessment?

 g) Explain the process of screening and scoping.

Q 2.   (2X7=14)

 a) Explain in detail the need, importance and limitations of EIA.

 b) Write a detailed note on ISO 14000 series.

 c) Explain the environmental priorities in India with reference to sustainability.

Q3.   (2X7=14)

 a) Briefly explain the types of projects requiring EIA.

 b) Explain in detail, the step by step procedure of conducting EIA.

 c) Briefly discuss the composition and role of SEAC and EAC.

Q 4.   (2X7=14)

 a) What is the methodology of environmental auditing? Explain.

 b) How is environmental Impact statement prepared? Explain its significance.

 c) Give salient features of National Environmental Policies.

Q 5.   (2X7=14)

 a) Explain the EIA procedure of an oil refinery project.

 b) Briefly explain the assessment procedure of a thermal power plant.

 c) Explain the environmental impacts and assessment of nuclear power plant.

Programme: GEC (Re-Appear)   Session: 2021-22

Semester: I   Max. Time: 3 Hours

Course Title: Foundation Course in Ecology and Environment   Max. Marks: 70

Course Code: SIAS EVS 01 01 01 GE 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.   (4X3.5=14)

   a) In our environment how ecology plays an important role? Explain

   b) Discuss in detail about the abiotic components of an ecosystem?

   c) Write short notes on food chain, types of food chain and food web? Explain with figures.

   d) Discuss Shelford's law of tolerances and Liebig's law of minimum with examples?

   e) Write short notes on ecotone, edge effect and ecological niche of a species in an ecosystem?

   f) Explain the different steps involved in the phenomenon of ecological succession?

   g) Explain with figure pyramid of number and pyramid of energy?

Q 2.   (2X7=14)

   a) What is autecology? Explain different characteristic features of a autecology population in detail.

   b) With the help of figure explain different trophic levels of a lotic ecosystem?

   c) What are ecological pyramids? Describe the pyramid of number, biomass and energy of a forest ecosystem?

Q3.   (2X7=14)

   a) What are environmental factors? Explain different types of biotic and abiotic factor of an ecosystem?

   b) Explain the biological productivity and flow of energy in a terrestrial ecosystem?

   c) How the plants and animals adapt themselves in response to extreme of temperature?

Q 4.   (2X7=14)

   a) Explain single channel and Y-shaped energy flow model of an ecosystem with figures?

   b) Describe in detail about the life history strategies of a species living in a forest ecosystem? What is the difference between r and k species?

   c) State the difference between biotic factors of a pond ecosystem and forest ecosystem?
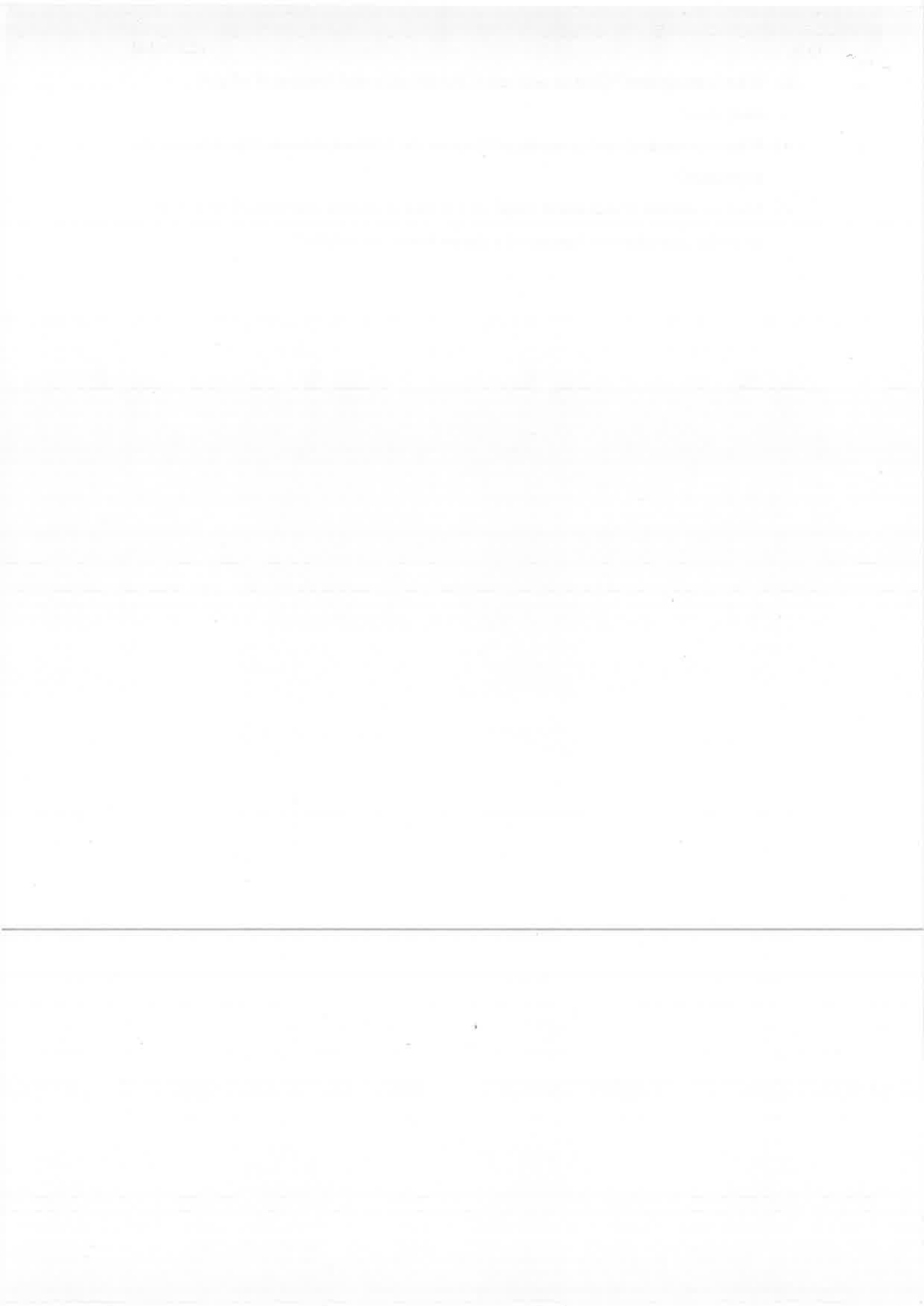
Q 5. (2X7=14)

a) What is ecosystem? Give an account of the structure and function of a lentic ecosystem?

b) What is autecology and synecology? Explain the different characteristic features of a population?

c) Give an account of sequential stages of a typical hydrosere succession? And write down the characteristic features of a climax forest community?

Programme: GEC (Re-appear)   Session: 2021-22

Semester: I   Max. Time: 3 Hours

Course Title: Foundation Course in Ecology and Environment Max. Marks: 70

Course Code: SEES EVS 01 01 01 GE 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.   (4X3.5=14)

    a) Write short notes on ecology and sub-divisions of ecology?

    b) With the help of flowchart discuss the organizational level of ecological systems?

    c) Explain Shelford's law of tolerance and Liebig's law of minimum?

    d) Discuss abiotic factors of a desert ecosystem?

    e) State the difference between biotic factors of a pond ecosystem and forest ecosystem?

    f) With the help of diagram describe the flow of energy through different trophic level?

    g) What are keystone species, flagship species and ecological niche?

Q 2.   (2X7=14)

    a) State the difference between autecology and synecology and discuss the scope of ecology to control the environmental pollution in detail?

    b) Describe the biotic and abiotic components of an ecosystem?

    c) What is population interaction? Explain in brief different types of positive and negative interactions of a population with example?

Q3.   (2X7=14)

    a) How does temperature play an important role in the distribution of plants? Explain.

    b) Describe the biotic factors of an ecosystem? Explain the concept of limiting factors?

    c) What are abiotic factors? Explain different types of abiotic factors of an ecosystem?

Q 4.   (2X7=14)

    a) Discuss food chain and food web of a forest ecosystem and pond ecosystem with figures?

    b) What are Eltonian pyramids? Describe the different type of pyramids of a forest ecosystem?

    c) Explain in detail the abiotic and biotic factors of an aquatic ecosystem?

Q 5.   (2X7=14)

    a) What is ecological succession? Explain the different stages of hydrosere succession?

b) Discuss life history strategies and comparative difference between r and k species of a population?

c) How does the light and temperature play an important in the distribution of animals?

CENTRAL UNIVERSITY OF HARYANA

Even Semester Term End Examinations June 2022

Programme: M.Sc.   **Session:** 2021-22

Semester: IV   **Max. Time: 3 Hours**

Course Title: Environmental Biotechnology   **Max. Marks: 70**

Course Code: SEES EVS 01 04 05 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) Explain the significance of DNA and RNA in living systems?

     b) Write short notes on cloning vectors?

     c) Explain recombinant DNA technology

     d) What are the different applications of polymerase chain reaction?

     e) Discuss different methods of bio-hydrogen synthesis?

     f) What are the factors affecting the efficiency of biofertilizers?

     g) Write short notes on plant incorporated protectants?

Q 2.   (2X7=14)

     a) Give a brief account of structure and function of DNA and RNA?

     b) Describe Environmental genomics, significance, sample and processing and its application in detail?

     c) Explain in detail genómic library, c-DNA library and identification and isolation of genes?

Q3.   (2X7=14)

     a) What are genetically modified organisms? Explain the mechanism of horizontal gene transfer in bacteria with figures in detail?

     b) Explaining xenobiotic compounds, discuss the hazardous effects of xenobiotic compounds on aquatic system, plants and human health?

     c) Explain polymerase chain reaction and its applications in detail?

Q 4.   (2X7=14)

     a) What are bioreactors? Explain with figures various types of bioreactors used?

     b) What is pretreatment process? Explain different types of pre-treatment processes for the synthesis of ethanol from lignocellulosic feedstock?

     c) What are enzymes? Discuss screening and isolation of microorganisms along with different fermentation techniques for production of cellulase enzyme?

Q 5. (2X7=14)

a) What are biofertilizers? Explain in brief different types of biofertilizers?

b) What is symbiotic nitrogen fixation? Explain the mechanism of nitrogenase enzyme for nitrogen fixation?

c) Discuss in detail with figures different types of ex-situ bioremediation techniques for the treatment of heavy metal contaminated soil?
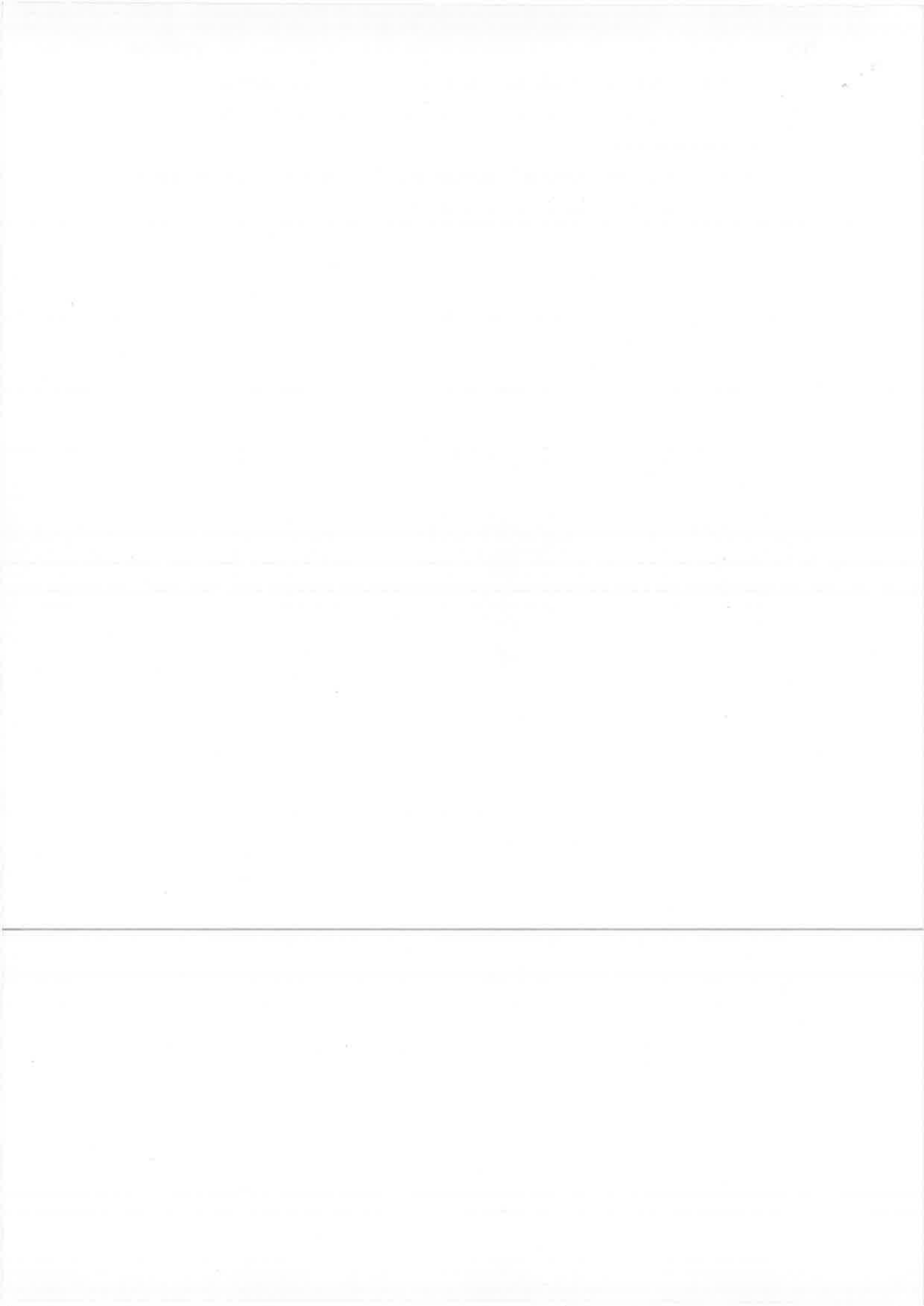
CENTRAL UNIVERSITY OF HARYANA

Even Semester Term End Examinations June 2022

Programme: M.Sc. (Environmental Sciences)   Session: 2021-22

Semester: Fourth   Max. Time: 3 Hours

Course Title: Forest and Wildlife Ecology   Max. Marks: 70

Course Code: SEES EVS 01 04 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 student need to answer any two parts of each question. Each part carries seven marks.

Q 1.   (4X3.5=14)

    a) Functions of forest ecosystem

    b) Afforestation

    c) Game farming

    d) Shifting cultivation

    e) Animal cruelty

    f) Wildlife sanctuaries

    g) Zoos in India

Q 2.   (2X7=14)

    a) Define forest. What are types and composition of forest in India?

    b) Write down the scope, objectives and necessities of the agroforestry.

    c) Define primary productivity. What are methods used in measurements of productivity in different ecosystems?

Q3.   (2X7=14)

    a) Define silviculture. Make a descriptive note on biodiversity and forest.

    b) What are the impacts of shifting cultivation on forest ecosystems? Give few examples.

    c) What are principle and objectives of forest management? Discuss different techniques used for forest management.

Q 4.   (2X7=14)

    a) Define wildlife. What are the roles of wildlife in nature? Discuss the factors influencing wildlife.

    b) Discuss in details about common flora and fauna of India.

    c) Discuss the following

       i. Artificial stocking

ii. Habitat improvement

Q.5.   (2X7=14)

    a) Make a detailed note on international trade of wildlife.

    b) What are the roles of local communities in wildlife management in India?

    c) Write a brief note on the following:

  I.   National Parks and Biosphere reserves

  II.   Define special projects, describe one example of it.