TDC (CBCS) Odd Semester Exam., 2019

ECOLOGY AND ENVIRONMENTAL SCIENCE

(3rd Semester)

Course No. : EESHCC-301T

(Ecology and Ecosystems)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

UNIT—I

1. Answer any *two* of the following questions : 2×2=4

(a) What do you mean by landscape ecology?

(b) What is acclimation? How does it differ from acclimatization?

(c) Distinguish between autecology and synecology.

2. Answer *either (a) or (b)* :

(a) Define limiting factors. Explain Shelford's law of tolerance with suitable illustration. 2+4=6

(b) Define ecological niche. Write a brief note on different types of ecological niche with significance. 1+4+1=6

UNIT—II

3. Answer any *two* of the following questions : 2×2=4

(a) What is meta-population? Give example.

(b) What is life table? State its significance.

(c) Distinguish between exponential growth and logistic growth.

4. Answer *either (a) or (b)* :

(a) What do you mean by density dependent and density independent factors? Explain the various density dependent factors of population growth. 2+4=6

(b) Define population. Explain how density, natality and mortality regulate population. 2+4=6

UNIT—III

5. Answer any *two* of the following questions : 2×2=4

(a) State the characteristics of community.

(b) Define keystone species. Give example.

(c) Define ecotone and edge effect.

6. Answer *either (a) or (b)* :

(a) What do you mean by ecological succession? Explain briefly the positive and negative ecological succession with suitable illustrations. 2+4=6

(b) Define climax community. Explain the various theories pertaining to the establishment of climax community. 1+5=6

UNIT—IV

7. Answer any *two* of the following questions : 2×2=4

(a) Distinguish between lotic and lentic ecosystems.

(b) What is detritus food chain? Give example.

(c) Write a brief note on ecological efficiency.

8. Answer *either (a) or (b)* :

(a) Define ecosystem. Describe the structure and function of forest ecosystem. 1+5=6

(b) What are the various abiotic and biotic components of an ecosystem? Explain the role of different abiotic components of an ecosystem. 2+4=6

UNIT—V

9. Answer any *two* of the following questions : 2×2=4

(a) What do you mean by biotic accumulation?

(b) Write a note on hydrological cycle.

(c) What are ecosystem losses? Explain briefly.

10. Answer *either (a) or (b)* :

(a) What is biogeochemical cycle? Explain carbon cycle in nature with suitable diagram. 2+4=6

(b) What do you mean by ecosystem input of nutrient? Explain the various models of nutrient cycle in nature. 2+4=6

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TDC (CBCS) Odd Semester Exam., 2019

ECOLOGY AND ENVIRONMENTAL SCIENCE

(3rd Semester)

Course No. : EESHCC-302T

(Atmosphere and Global Climate Change)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

UNIT—I

1. Write short notes on/Answer any *two* of the following : 2×2=4

(a) Layered structure of the atmosphere

(b) Sun is absolutely dominant in supply of energy to earth's surface. Explain.

(c) The density of the atmosphere decreases with height. Explain.

2. Earth is unique amongst the planets of the solar system in possessing life forms. Explain with suitable examples. 6

Or

What are greenhouse gases? Describe how the rising level of gases impacts the world climate.

UNIT—II

3. Write short notes on any *two* of the following : 2×2=4

(a) Factors responsible for the formation of wind

(b) Cloud formation and causes of rain

(c) El Niño effect

4. Briefly describe how process of radiation, conduction and convection enables the transfer of heat from sun to the ocean and atmosphere. 2+4=6

Or

How are cyclones formed? Describe the stages of formation of tropical cyclone. Give an example of a hurricane affected country and the year. 2+3+1=6

UNIT—III

5. Write short notes on any *two* of the following : 2×2=4

(a) Short-range weather forecast

(b) Global warming

(c) Impact of climate change on agriculture

6. What is climate? Explain how various factors are responsible for the climate change. 1+5=6

Or

Vegetation distribution is related to the condition of rainfall or drought. Explain with examples. 6

UNIT—IV

7. Write short notes on any *two* of the following : 2×2=4

(a) Ozone hole formation

(b) Effect of ozone depletion on human beings

(c) Mitigation measures for ozone depletion

8. What is ozone layer? What is its importance? Describe the process of ozone formation with diagrammatic illustration. 1+2+3=6

Or

What are the causes of ozone layer depletion? Illustrate with examples. 6

UNIT—V

9. Write short notes on any *two* of the following : 2×2=4

(a) Kyoto Protocol, 1997

(b) Carbon credit

(c) Montreal Protocol on ozone depleting substances

10. Describe the current highlights on international initiative for mitigating climate change IPCC. 6

Or

Describe India's initiative for mitigating climate change and highlight the role of Ministry of Environment, Forests and Climate Change.

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ECOLOGY AND ENVIRONMENTAL SCIENCE

(3rd Semester)

Course No. : EESHCC-303T

(Atmosphere and Global Climate Change)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer *any* **two** questions from each Unit of Part—A and **one** from each Unit of Part—B

UNIT—I

PART—A

1. Define biosphere. What are the parts of biosphere? 2

2. What do you mean by Earth's atmosphere? What are the layers of the atmosphere? 2

3. What is Milankovitch cycle? 2

PART—B

4. Describe the structure and composition of atmosphere. 6

5. Name the greenhouse gases. Write a note on greenhouse effects. 1+5=6

UNIT—II

PART—A

6. Define climate. How is it differ from weather? 2

7. What do you mean by Southern oscillation? 2

8. What is tropical cyclone? 2

PART—B

9. Describe the effect of urbanization on micro-climate. 6

10. Write a note on meteorological parameters. 6

UNIT—III

PART—A

11. What do you mean by atmospheric windows? 2

12. What are the causes of climate change? 2

13. Write down the effects of sea level rise. 2

PART—B

14. Describe the trends of climate change and global warming. 6

15. Describe the impacts of change on atmosphere and agricultural productivity. 6

UNIT—IV

PART—A

16. What is ozone shield? 2

17. Write down the importance of ozone layer. 2

18. Write the full form of CFCs. Mention the sources of CFCs. 2

PART—B

19. Write down the causes of ozone layer depletion. Write a note on Chapman cycle. 6

20. Describe the effects of ozone depletion and mention the mitigation measures. 6

UNIT—V

PART—A

21. What is carbon credit? 2

22. What do you mean by carbon trading? 2

23. What are the main objectives of Clean Development Mechanism? 2

PART—B

24. Define convention. Give an account on the convention of climate change. 2+4=6

25. Write a note on Kyoto Protocol. 6

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