

No. of Printed Pages : 3

MSD-014

**POST GRADUATE DIPLOMA IN
SUSTAINABILITY SCIENCE (PGDSS)**

Term-End Examination

00099

December, 2014

MSD-014 : ECOLOGICAL ECONOMICS

Time : 3 hours

Maximum Marks : 100

Note : Answer **all** questions as per the instructions given in each question.

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1. Attempt any **ten** questions. Answer the following questions in about 100 words each. Each question carries 2 marks. $10 \times 2 = 20$
- (i) What are the three ways to increase the profit, according to Karl Marx ?
 - (ii) Explain the differences between 'stock-flow resources' and 'fund-service resources'.
 - (iii) What are the four stages in the demographic transition model ?
 - (iv) Explain IPAT.
 - (v) Explain the concept of 'non-revival resource'.
 - (vi) What are the two basic components of 'Marginal Social Cost' ? Define them.

- (vii) Define Global Living Planet Index.
- (viii) What are the major reasons for wetland losses in India ?
- (ix) Write a brief note on non-point source of water pollution in agriculture.
- (x) What is CPRs ? What are its major contributions in rural economy ?
- (xi) What is Chipko movement ? How was it started ?
- (xii) What is non-use value of ecosystem ? Give an example.
- (xiii) What is Polluter Pays Principle ? Explain with a suitable example.
- (xiv) Explain the concept of Emission trading.
- (xv) How is GNP different from GDP ?

2. Attempt any **eight** questions. Write short notes on the following in about 300 words each. Each question carries 5 marks. 8×5=40

- (i) Resource Curse Hypothesis
- (ii) Maximum Sustainable Yield
- (iii) Economies of Waste Generation
- (iv) Factor Endowment Hypothesis
- (v) Ecological Footprint
- (vi) LM Curve

- (vii) Poverty and Environmental Degradation
- (viii) Urban Air Pollution
- (ix) Market Price Method
- (x) Travel Cost Method
- (xi) Kyoto Protocol
- (xii) Pollution Expenditure Accounting

3. Attempt any **four** questions. Answer the following questions in about 500 words each. Each question carries 10 marks. $4 \times 10 = 40$

- (i) Briefly discuss the Environment-Economy Model.
 - (ii) Write an essay on the trend of Global and Regional ecological footprints.
 - (iii) Write an essay on 'women's pro-environmental attitude across the globe'.
 - (iv) Why is there a need for valuing ecosystem services? Discuss its significance.
 - (v) Briefly discuss the issues and challenges of Green Accounting.
 - (vi) Write an essay on 'Carbon trading and tradable permits'.
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No. of Printed Pages : 4

MSD-014

**POST GRADUATE DIPLOMA IN
SUSTAINABILITY SCIENCE (PGDSS)**

Term-End Examination

June, 2015

00030

MSD-014 : ECOLOGICAL ECONOMICS

Time : 3 hours

Maximum Marks : 100

Note : Answer *all* questions as per the instructions given in each question.

1. Attempt any *ten* questions. Answer the following questions in about 100 words each. Each question carries 2 marks. $10 \times 2 = 20$

- (i) What is the concept behind the 'theory of comparative advantage' ? Explain with a suitable example.
- (ii) What is thermodynamics ? State any two of the three laws of thermodynamics.
- (iii) Explain the relationship between human capital and natural capital.
- (iv) Explain $I = PAT$.

- (v) Briefly explain the concept 'Excludability'.
- (vi) Differentiate between Globalization and Internationalization.
- (vii) Explain the concept 'human energy equivalent'.
- (viii) Privatization of common property resources in the fragile ecosystem deepens environmental degradation. Elaborate.
- (ix) What is Disability-Adjusted Life Years (DALYs) ? What is India's status in global scenarios ?
- (x) Explain the concept 'Tragedy of Commons' with suitable example.
- (xi) Indigenous women are custodians of local biodiversity. Do you agree ? Justify.
- (xii) Briefly explain the concept 'Option Value'.
- (xiii) What are the three major policy instruments for sustainable management of ecological resources ?
- (xiv) Explain the concept 'Carbon offset' .
- (xv) Define Net Domestic Product and Net National Product.

2. Attempt any **eight** questions. Write short notes on the following in about 300 words each. Each question carries 5 marks. $8 \times 5 = 40$

- (i) Kuznets' Hypothesis
- (ii) Bio-economic model
- (iii) Public Goods
- (iv) Pollution Haven Hypothesis
- (v) Ecological Overshoot
- (vi) IS Curve
- (vii) Urban Water Pollution
- (viii) Solid Waste
- (ix) Hedonic Price Method
- (x) Contingent Valuation Method
- (xi) Carbon Trading
- (xii) Green Accounting in India

3. Attempt any **four** questions. Answer the following questions in about 500 words each. Each question carries 10 marks. $4 \times 10 = 40$

- (i) Discuss the links between environment and economy, with suitable examples.
- (ii) Explain the economic theories of non-renewable resources.

- (iii) Write an essay on the impact of economic activity on climate change.
- (iv) What is eco-feminism ? Briefly discuss.
- (v) Write an essay on the economic value of ecosystem services by giving a suitable example from India.
- (vi) Briefly discuss the flexibility provisions of Kyoto Protocol.



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MSD-014

**POST GRADUATE DIPLOMA IN
SUSTAINABILITY SCIENCE (PGDSS)**

Term-End Examination

December, 2015

MSD-014 : ECOLOGICAL ECONOMICS

Time : 3 hours

Maximum Marks : 100

Note : Answer **all** questions as per the instructions given in **each** questions.

1. Attempt **any ten** questions. Answer the following questions in about **100** words each. Each question carries **two** marks : **10x2=20**
 - (a) Define Ecological Economics.
 - (b) What is Adam Smith's idea of self interest and competitive markets ?
 - (c) What is thermodynamics ?
 - (d) Write the common interpretation of standard growth theory.
 - (e) Explain $I \equiv PAT$.
 - (f) How economists defined the Renewable and Non-renewable resources ?
 - (g) What is a 'stock-flow resources' ?
 - (h) What are the four components of 'Economy's Capital Stock' ?
 - (i) What is Globalization ?

- (j) Define co-evolutionary economics.
- (k) What is Disability-Adjusted Life Years ?
- (l) What are the major factors responsible for the deterioration of the CPRs in India ?
- (m) Define the term 'Eco-feminism'.
- (n) Explain 'ecosystem function'.
- (o) What is the major concept behind 'Green Banking' ?

2. Attempt **any eight** questions. Write short notes on the following in about **300** words each. Each question carries **five** marks : **8x5=40**

- (a) Demographic Transition Model.
- (b) Common and Perrings' Model of Sustainability.
- (c) Limitations of Market Price Method.
- (d) Decentralized Policy Instrument.
- (e) Advantages of International Carbon Trading.
- (f) Net National Product.
- (g) Limitation of conventional System of National Accounting (SNA).
- (h) Limitations of steady-state bio-economic model.
- (i) Excludable Resource and Public goods.
- (j) Marginal Social Cost.
- (k) Wetland losses in India.
- (l) Evolution of CPR institutions in India.

3. Attempt **any four** questions. Answer the following questions in about **500** words each. Each question carries **ten** marks : **4x10=40**
- (a) Define entropy. Briefly explain the laws of thermodynamics through the entropy hourglass with suitable diagram.
 - (b) Does resource depletion limit economic growth ? Justify your comment.
 - (c) What is Sustainable Yield ? Explain with Sustainable Yield Curve.
 - (d) Write an essay on the concept of overshoot and the danger of collapse.
 - (e) Briefly explain the 'poverty-environment hypothesis' in the context of CPR.
 - (f) Explain the need of environmental policy instruments.

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00442

**POST GRADUATE DIPLOMA IN
SUSTAINABILITY SCIENCE (PGDSS)**

Term-End Examination

June, 2016

MSD-014 : ECOLOGICAL ECONOMICS

Time : 3 hours

Maximum Marks : 100

Note : Answer all questions as per the instructions given in each question.

1. Attempt any ten questions. Answer the following questions in about 100 words each. Each question carries 2 marks. 10x2=20
- (a) Define 'Green Economics'.
 - (b) What is 'value in use' and 'value in exchange' ?
 - (c) State the 'second law of thermodynamics'.
 - (d) Write the basic concept behind 'the tragedy of the commons'.
 - (e) Explain I \equiv PAT.
 - (f) How economists defined the Renewable and Non-renewable resources ?
 - (g) What is 'Fund-Service resource' ?
 - (h) Differentiate between 'Human Capital' and 'Intellectual Capital'.
 - (i) Define the term Internationalization.
 - (j) What is human energy equivalent ?

- (k) What are the four types of natural resources based on the relationships between resources and its users ?
- (l) Explain the 'Poverty-Environment-Hypothesis'.
- (m) What is the basic objective of ecosystem valuation ?
- (n) What are the three broad policy instruments to control and regulate pollution ?
- (o) What is the basic concept behind 'carbon market' ?

2. Attempt **any eight** questions. Write short notes on the following in about **300** words each. Each question carries **5** marks. **8x5=40**

- (a) Environmental Kuznet hypothesis
- (b) Total Economic value of Ecosystem Services
- (c) Advantages of Hedonic Pricing Method
- (d) Market based instruments
- (e) Carbon offsets
- (f) Net National Product
- (g) Trade and Natural Resource policies link
- (h) Economic theories of non-renewable resources
- (i) Waste absorption capacity as economic characteristics
- (j) Living Planet Index (LPI)
- (k) Urban Solid Waste
- (l) Chipko movement

3. Attempt **any four** questions. Answer the following questions in about **500** words each. Each question carries **10** marks. **4x10=40**

- (a) Write an essay on 'ecological scarcity and the issue of sustainability'.
- (b) Will the environment's ability to process wastes limit the economic growth ? Comment.
- (c) Explain how globalization and international trade lead to overexploitation of local resources.
- (d) Briefly discuss the impact of economic activity on climate change.
- (e) Write an essay on 'Green accounting and sustainable development'.
- (f) Briefly explain the concept of Total Economic Values of Ecosystem Services with suitable example in India.

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MSD-014

00229

**POST GRADUATE DIPLOMA IN
SUSTAINABILITY SCIENCE (PGDSS)**

Term-End Examination

December, 2016

MSD-014 : ECOLOGICAL ECONOMICS

Time : 3 hours

Maximum Marks : 100

Note : Answer any ten questions. Each question carries equal marks.

1. Explain the evolution of economic thought and its relationship with ecology and economy. 10
2. (a) What are the laws of thermodynamics ?
(b) Discuss the laws of thermodynamics in the context of ecological economics. 4+6=10
3. Write a brief note on the following concepts :
(a) Entropy 5+5=10
(b) Carrying capacity
4. Discuss the characteristics of abiotic and biotic resources through the economic concepts of excludability, rivalness, stock-flow and fund-service. 10
5. Explain the Resource Curse Hypothesis. 10

6. Discuss the limitations of steady-state bio-economic model. 10
 7. (a) What are biotic resources ? 2+8=10
(b) Explain the characteristics of biotic resources with suitable examples.
 8. Give an account on ecosystem services with suitable examples. 10
 9. Write a brief account on man-made capital. 10
 10. Explain the following hypothesis : 5+5=10
(a) Pollution Haven Hypothesis
(b) Factor Endowment Hypothesis
 11. Discuss the concept of ecological footprint and trends in global ecological footprint. 10
 12. Explain the impact of climate change on crop, livestock and fisheries productivity, biomass change, human health and water resources. 2.5+2.5+2.5+2.5=10
 13. Discuss the reasons for wet land losses in India. 10
 14. (a) What are common pool resources ? 2+8=10
(b) Explain the significance of common pool resources in rural areas.
 15. Explain the methods and techniques for valuation of ecosystem services. 10
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MSD-014

**POST GRADUATE DIPLOMA IN
SUSTAINABILITY SCIENCE (PGDSS)**

Term-End Examination

00273

June, 2017

MSD-014 : ECOLOGICAL ECONOMICS

Time : 3 hours

Maximum Marks : 100

Note : Answer any **ten** questions. Each question carries equal marks.

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1. (a) Explain the significance of entropy hourglass.
(b) Describe the linkages between economy and environment with the help of a suitable diagram. $5+5=10$
 2. Discuss the Demographic Transition Model. 10
 3. Write short notes on the following : $4 \times 2 \frac{1}{2} = 10$
 - (a) Stock-Flow Resource
 - (b) Fund-Service Resource
 - (c) Excludable Resource
 - (d) Rival Resource

4. (a) What is Environmental Kuznets Curve ?
(b) Discuss the features of Environmental Kuznets Curve. $2+8=10$
5. Write short notes on the following concepts : $5+5=10$
(a) IPAT Identity
(b) Maximum Sustainable Yield
6. (a) What are abiotic resources ?
(b) Discuss the importance and characteristics of abiotic resources. $2+8=10$
7. Explain the principle of sustainable extraction of renewable resources with suitable illustrations. 10
8. Discuss waste absorption in the ecosystem as an ecosystem service. 10
9. Write short notes on the following : $5+5=10$
(a) Co-evolutionary Economics
(b) Living Planet Index
10. Explain the concept of ecological overshoot through IS-LM model. 10
11. (a) What is fragile ecosystem ?
(b) Discuss the characteristics of fragile Himalayan ecosystem. $2+8=10$

12. Explain the following :

$$4 \times 2 \frac{1}{2} = 10$$

- (a) Urban air pollution
- (b) Urban noise pollution
- (c) Urban solid waste management
- (d) Urban water pollution

13. (a) What is tragedy of commons ?

- (b) Discuss the problems associated with land based common pool resources in India. $2+8=10$

14. (a) What are the economic compulsions of women's ecological conservationism ?

- (b) Discuss the gendered impacts of environmental degradation. $5+5=10$

15. (a) What are the types of environmental policy instruments ?

- (b) Explain the decentralised environmental policy instruments.

- (c) Discuss the command and control regulations. $2+4+4=10$

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MSD-014

00114

**POST GRADUATE DIPLOMA IN
SUSTAINABILITY SCIENCE (PGDSS)****Term-End Examination****June, 2018****MSD-014 : ECOLOGICAL ECONOMICS****Time : 3 hours****Maximum Marks : 100****Note : (i) Attempt any ten questions.****(ii) All questions carry equal marks.**

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|----|-----|--|---|
| 1. | (a) | Describe environment - economy model. | 4 |
| | (b) | Define elasticity of substitution. | 3 |
| | (c) | What is global warming ? | 3 |
| 2. | (a) | Explain the operational principles of sustainable development identified by Herman Daly. | 4 |
| | (b) | Distinguish between renewable and non renewable resources. | 4 |
| | (c) | What is non-rival resources ? | 2 |
| 3. | (a) | Describe Pollution Haven Hypothesis (PHH). | 5 |
| | (b) | Give an account of the effect of climate change on the Indian Himalayan region. | 5 |
| 4. | (a) | State the need of CPR Institutions. | 3 |
| | (b) | What is valuation of eco-system services ? Explain. | 4 |
| | (c) | Briefly describe the Hedonic Pricing Method of estimating economic values. | 3 |

5. (a) Give your comments on "Resource Depletion limit growth". 5
(b) What is Resource Curse Hypothesis ? Explain it by giving suitable examples. 5
6. (a) Explain how exhaustion of non-renewable resources limit the economic growth. 5
(b) Briefly explain the economics of waste generation. 5
7. (a) Discuss the causal relationship between poverty and environmental degradation in a fragile eco-system. 5
(b) What is Common Pool Resources ? What are their important contributions ? 5
8. (a) Explain the need and significance of valuing eco-system services. 5
(b) What is Contingent Valuation Method (CVM) ? Describe its advantages and disadvantages in estimating economic value of eco-system and environmental services. 5
9. Explain the model of sustainable development. 10
10. Describe the steady-state bio-economic equilibrium with a focus on Fishery. 10
11. Explain the concept of sustainable extraction. 10
12. Enumerate the reasons for wet land losses in India. 10
13. Describe various types and volumes of Solid wastes. 10
14. Illustrate the benefits of women's participation in natural resource management. 10

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MSD-014

00491

**POST GRADUATE DIPLOMA IN
SUSTAINABILITY SCIENCE (PGDSS)****Term-End Examination****December, 2018****MSD-014 : ECOLOGICAL ECONOMICS***Time : 3 hours**Maximum Marks : 100**Note : (i) Attempt any ten questions.**(ii) All questions carry equal marks.*

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|----|-----|--|---|
| 1. | (a) | Define ecological economics. | 3 |
| | (b) | What is excludable and rival resources ? | 3 |
| | (c) | Write briefly about ozone shield rupture. | 4 |
| 2. | (a) | Briefly explain about the IPAT identity. | 5 |
| | (b) | Differentiate between biotic and abiotic resources. | 5 |
| 3. | (a) | Briefly explain about the Pareto-optimality allocation in the market. | 4 |
| | (b) | Write short note on factor endowment hypothesis. | 3 |
| | (c) | Write a brief note on women's pro-environmental attitudes. | 3 |
| 4. | (a) | What are the economic compulsions of women for ecological conservation ? | 5 |
| | (b) | What are the scope of applying Travel Cost Method in estimating economic value ? | 5 |
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|-----|-----|--|----|
| 5. | (a) | Briefly explain the laws of thermodynamics. | 5 |
| | (b) | Describe about the carrying capacity of earth for humans. | 5 |
| 6. | (a) | Illustrate the statement : "Environment's ability to process wastes limit economic growth." | 5 |
| | (b) | Classify the resources based on time references. | 5 |
| 7. | (a) | Describe about the man-made capital. | 5 |
| | (b) | Explain how externalities affects the allocation of resources and functioning of the market. | 5 |
| 8. | (a) | Differentiate between contingent valuation method and contingent choice method. | 5 |
| | (b) | Explain about various market based instruments for environment improvement. | 5 |
| 9. | | Describe the conceptual framework and application of an environment-economy model. | 10 |
| 10. | | Explain the environmental Kuznets hypothesis with examples of evidences. | 10 |
| 11. | | Discuss the relationship between the non-renewable resources and the flow of services from them. | 10 |
| 12. | | What do you understand by eco-system services? State the important eco-system services. | 10 |
| 13. | | Define Common Pool Resources (CPR). Describe the factors responsible for degradation of CRR. | 10 |
| 14. | | Describe what constitutes total economic value of eco-system services. | 10 |

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**POST GRADUATE DIPLOMA IN
SUSTAINABILITY SCIENCE (PGDSS)**

Term-End Examination

June, 2019

MSD-014 : ECOLOGICAL ECONOMICS

Time : 3 Hours

Maximum Marks : 100

*Note : Attempt any ten questions. Answer in about
500 words. All questions carry equal marks.*

1. Explain the economic view of the environment.

10

2. What is entropy ? Explain the entropy
hourglass with suitable diagram.

2, 8

3. Define the following terms : $2\frac{1}{2}$ each

- (a) Global warming
- (b) Human biomass appropriation
- (c) Ozone Shield rupture
- (d) Land degradation

4. Describe Environmental Kuznet Hypothesis. 10

[2]

5. What is steady-state bio-economic model ?
Explain with suitable example. 10
6. How is a stock-flow resource different from
fund service resources ? Explain with suitable
examples. 10
7. What is market ? Explain competitive general
equilibrium theory. 3, 7
8. Describe the living planet index and ecological
footprints. 5, 5
9. What do you mean by total economic value of
ecosystem services ? Explain. 10
10. What are the advantages and limitations of
contingent valuation method ? 10
11. Briefly discuss the linkages between poverty
and environmental degradation in a fragile
ecosystem. 10
12. Define CPRs. What are the major factors for
the degradation of CPRs in India ? 4, 6

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POST GRADUATE DIPLOMA IN SUSTAINABILITY SCIENCE (PGDSS)

Term-End Examination

December, 2019

MSD-014 : ECOLOGICAL ECONOMICS

Time : 3 hours

Maximum Marks : 100

- Note : (i) Attempt *any ten* questions.
(ii) Answer in about 500 words.
(iii) All questions carry equal marks.

1. Explain the *Axiom of Material Value* and the *Axiom of Abundance* principles. 5+5
2. What is Sustainable Development ? Explain $I = PAT$. 4+6
3. Explain the Economic theories of Non-renewable resources. 10
4. What is Sustainable Extraction ? Explain with suitable graph. 10
5. Describe the Marginal Private Cost and Incidental Costs with suitable examples. 5+5
6. What are the Pollution Haven Hypothesis and the Factor Endowment Hypothesis ? 5+5
7. Define the Disability-Adjusted Life Years. What are the major impacts of Air Pollution on health ? 4+6
8. Explain the following terms : 2½x4
 - (a) Biomedical waste
 - (b) E-waste
 - (c) Hazardous waste
 - (d) Municipal Solid waste
9. Elaborate the significance of CPRs in rural areas. 10
10. How do you define 'Eco-feminism' ? Explain Women's Pro-environmental attitudes. 5+5
11. Do you feel that there is a need for economic valuation of ecological services ? Justify. 10
12. Briefly elaborate the various types of environmental policy instruments. 10

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**POST GRADUATE DIPLOMA IN
SUSTAINABILITY SCIENCE (PGDSS)**

Term-End Examination

June, 2020

MSD-014 : ECOLOGICAL ECONOMICS

Time : 3 Hours

Maximum Marks : 100

***Note : Attempt any ten questions. All questions
carry equal marks.***

1. Explain the framework of the environment-economy linkages model. 10
2. Differentiate between stock-flow resource and fund service resource. Give suitable examples. 10
3. Explain the following terms : 5, 5
 - (a) Earth's carrying capacity
 - (b) Demographic transition model

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[2]

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4. Explain IPAT identity. 10
5. Define sustainable yield. Explain sustainable yield curve with suitable graph. 3, 7
6. What are the major ecosystem services provided by the Urban Forest ? Explain with suitable examples. 10
7. Discuss impacts of international trade and globalisation on sustainability of forest in India. 10
8. What is co-evolutionary economics ? Explain, why joint production techniques are important co-evolutionary economics. 5, 5
9. Briefly explain, how the environmental degradation and poverty are interrelated in a fragile ecosystem of India. 10
10. Explain different types of urban solid wastes in India. 10
11. What is contingent valuation method ? What are its limitations ? 5, 5

[3]

12. Define the following terms :

$2\frac{1}{2}$ each

- (a) Taxes
- (b) Subsidy
- (c) Compensatory incentives
- (d) Emission trading

13. What is carbon trading ? What are its advantages ?

5, 5

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**POST GRADUATE DIPLOMA IN
SUSTAINABILITY SCIENCE
(P. G. D. S. S.)**

**Term-End Examination
December, 2020**

MSD-014 : ECOLOGICAL ECONOMICS

Time : 3 Hours

Maximum Marks : 100

Note : Attempt any *ten* questions. All questions carry equal marks.

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1. What is Green Accounting ? Elaborate any *two* major challenges to Green Accounting in India.

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2. What is carbon tradable permits ? How can it be used within a country ? Explain. 3+7
3. Explain by giving suitable examples the steps in ecosystem service valuation when market value of the resources exist. 10
4. Discuss the need for valuation of ecological services across the globe. 10

[2]

5. Write a brief note on wetland loss in India. 10
6. Describe the economic impact of air pollution with suitable example. 10
7. Explain the term 'Tragedy of Commons' with suitable examples in India. 10
8. What is Eco-feminism ? Explain the economic compulsion of women's ecological conservatism. 3+7
9. What is Bio-economic model ? What are its limitations ? 5+5
10. What are various components of man-made capital in capital stock economy ? 10
11. Elaborate the economy-environment linkages with suitable diagram. 10
12. Define the following terms : 5+5
 - (a) Carrying capacity
 - (b) Ecosystem services