

**2024/TDC (CBCS)/EVEN/SEM/
EESSEC-401T/(A/B)/150**

TDC (CBCS) Even Semester Exam., 2024

**ECOLOGY AND ENVIRONMENTAL SCIENCE
(4th Semester)**

Course No. : EESSEC-401T

Full Marks : 50

Pass Marks : 20

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

**Candidates have to answer either from
Option—A or Option—B**

OPTION—A

Course No. : EESSEC-401T (A)

(Remote Sensing, GIS and Modelling)

UNIT—I

- 1. Answer any three from the following
questions : 1×3=3**

(a) What is aerial photography?

(b) Define sensor.

(2)

- (c) Name one natural and one artificial satellite.
- (d) Which part of the electromagnetic spectrum has the least wavelength?
2. Answer any *one* from the following questions : 2
- (a) Write a short note on spectral signature.
- (b) What is passive remote sensing? Give example.
3. Answer any *one* from the following questions : 5
- (a) Write a note on principles of remote sensing.
- (b) Illustrate the interaction of electromagnetic radiation with the earth's surface.

UNIT—II

4. Answer any *three* from the following questions : $1 \times 3 = 3$
- (a) Define GIS.
- (b) What is vector data?
- (c) Give one example of non-spatial data.
- (d) Name two components of GIS.

(3)

5. Answer any *one* from the following questions : 2
- (a) Distinguish between spatial and non-spatial data.
- (b) Mention two advantages of raster data.
6. Answer any *one* from the following questions : 5
- (a) Give a detailed note on the various components of GIS.
- (b) Differentiate between raster data and vector data. Give examples of each type of data. $4+1=5$

UNIT—III

7. Answer any *three* from the following questions : $1 \times 3 = 3$
- (a) What is the full form of GPS?
- (b) Define data import.
- (c) Name one GIS software package.
- (d) What is digital mapping?

(4)

8. Answer any *one* from the following questions : 2

(a) Give two differences between landuse and landcover.

(b) What is GIS software package? Give example.

9. Answer any *one* from the following questions : 5

(a) What is GPS survey? How is it useful? 3+2=5

(b) Write a note on landuse/landcover mapping.

UNIT—IV

10. Answer any *three* from the following questions : 1×3=3

(a) Define geosciences.

(b) Give one application of remote sensing in agriculture.

(c) What is water resource management?

(d) Define land-use.

(5)

11. Answer any *one* from the following questions : 2

(a) Mention two applications of remote sensing and GIS in land-use planning.

(b) Give two examples where RS and GIS are used for atmospheric study.

12. Answer any *one* from the following questions : 5

(a) Give a detailed account of the application of remote sensing in forest studies.

(b) Describe in detail about the application of remote sensing in water resource management.

UNIT—V

13. Answer any *three* from the following questions : 1×3=3

(a) What are the measures of central tendency?

(b) Define sampling.

(c) What is Null-hypothesis?

(d) Name two types of measures of dispersion.

(6)

14. Answer any one from the following questions : 2

(a) Differentiate between parametric and non-parametric tests.

(b) What is the basic principle of ANOVA?

15. Answer any one from the following questions : 5

(a) Differentiate between normal and Poisson distribution of sampling with suitable examples.

(b) Write notes on the following : $2\frac{1}{2}+2\frac{1}{2}=5$

(i) Skewness

(ii) Kurtosis

(7)

OPTION—B

Course No. : EESSEC-401T (B)

(Environmental Impact and Risk Management)

UNIT—I

1. Answer any three from the following questions : $1 \times 3 = 3$

(a) What is the full form of EIA?

(b) When EIA was introduced in India?

(c) Why EIA is important?

(d) What is the full form of NEPA?

2. Answer any one from the following questions : 2

(a) Define EIA.

(b) What are the objectives of EIA?

3. Answer any one from the following questions : 5

(a) Describe the methodologies used for EIA evaluation.

(b) Discuss briefly the historical development of EIA.

(8)

UNIT—II

4. Answer any *three* from the following questions : 1×3=3

- (a) What is the full form of EMP?
- (b) What is impact identification?
- (c) What is baseline data?
- (d) What is the full form of EIS?

5. Answer any *one* from the following questions : 2

- (a) Mention two strategies of environmental management plans.
- (b) State the different environmental impacts.

6. Answer any *one* from the following questions : 5

- (a) Describe the role of project components in EIA.
- (b) Explain the role of Environmental Impact Statement in EIA.

(9)

UNIT—III

7. Answer any *three* from the following questions : 1×3=3

- (a) What is the full form of ISO?
- (b) What is rapid EIA?
- (c) What is the full form of SEA?
- (d) What is life cycle assessment?

8. Answer any *one* from the following questions : 2

- (a) What is ISO14000?
- (b) State the requirement of environmental audit.

9. Answer any *one* from the following questions : 5

- (a) Describe the role of environmental audit in EIA.
- (b) What are the principles of strategic environmental assessment?

(10)

UNIT—IV

10. Answer any *three* from the following questions : 1×3=3
- (a) What is category-B project?
 - (b) Why is EIA mandatorily requires in category A project?
 - (c) EIA in India is backed by which Act?
 - (d) What is river-valley project?
11. Answer any *one* from the following questions : 2
- (a) State the EIA issues in India.
 - (b) Write about the status of EIA in India.
12. Answer any *one* from the following questions : 5
- (a) Describe a case study on EIA in India.
 - (b) Briefly discuss the EIA regulations in India.

UNIT—V

13. Answer any *three* from the following questions : 1×3=3
- (a) What is exposure assessment?
 - (b) What do you mean by hazard?
 - (c) What is risk communication?
 - (d) What is meant by toxicity?

(11)

14. Answer any *one* from the following questions : 2
- (a) What is ecological risk assessment?
 - (b) What is toxicity assessment?
15. Answer any *one* from the following questions : 5
- (a) Give a detailed account of environmental risk assessment.
 - (b) Write a note on hazard identification and assessment.
