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Question Paper Code : 91258

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2025.

Fourth Semester

Civil Engineering

GE 3451 – ENVIRONMENTAL SCIENCES AND SUSTAINABILITY

(Common to : All branches (Except B.E. Environmental Engineering))

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Justify the important values of biodiversity.
2. Specify the causes for the man – wildlife conflicts.
3. What are the causes and impacts of noise pollution?
4. Suggest some preventive measures of water pollution.
5. Justify the innovative approach involved in the application of hydrogen energy.
6. Suggest the requisites for the implementation of new alternate energy sources.
7. Provide any four SDG goals.
8. What is carbon credit?
9. Give a brief description about the importance of ISO 14000 series.
10. Predict the important aspects attached with emission and sequestration.

PART B — (5 × 13 = 65 marks)

11. (a) Explore the importance aspects attached with eco-system for energy flow towards ecological succession.

Or

- (b) Explain in a detailed manner about the conservation of biodiversity based on the in-situ and ex-situ strategies.

12. (a) Explain in a systematic way with suitable case study for occupational health and safety management system.

Or

- (b) Apply in an appropriate manner suitable for the solid, hazardous and e-waste Management practices.

13. (a) Explore the relevant methodologies adapted for the implementation of energy management and conservation practices.

Or

- (b) Elaborate the origin, concept and power plants towards tidal energy and geothermal energy.

14. (a) Explain the practical possibilities for shifting from unsustainability towards sustainability with respect to the societal development.

Or

- (b) Elaborate in a systematic manner about the importance of concept of carbon credit, and carbon footprint.

15. (a) Describe in a detailed manner about the material life cycle assessment and environmental impact assessment.

Or

- (b) Explore in a clear manner about the sustainable urbanization for the better socio-economical and technological change.

PART C — (1 × 15 = 15 marks)

16. (a) Elaborate in a specific way about the focus and the targets with regard to attain sustainable development goals.

Or

- (b) Explore with a relevant case study with respect to the environmental management in an industry.