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**Question Paper Code : 21188**

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2023.

Fourth Semester

Civil Engineering

GE 3451 — ENVIRONMENTAL SCIENCES AND SUSTAINABILITY

(Common to All branches)

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is ecological succession?
2. List out the effect of habitat loss on biodiversity.
3. Mention the sources responsible for water pollution.
4. What is composting?
5. Distinguish between renewable and non-renewable energy sources.
6. What is a solar cell?
7. Define sustainable development.
8. Enumerate the concept of carbon credit.
9. What are the stages of a life cycle assessment LCA?
10. What are the benefits of environmental impact assessment?

PART B — (5 × 13 = 65 marks)

11. (a) Explain the structure and function of an ecosystem. Discuss the models of energy flow in an ecosystem.

Or

- (b) What are hotspots of biodiversity? Which are the hotspots found in India? Discuss their salient features.

12. (a) What are the impacts of noise on human beings? Explain the various control measures for noise pollution.

Or

- (b) What are the major sources of soil pollution? How does soil pollution affect soil productivity? What measures can be taken to control soil pollution?
13. (a) How can electricity be produced from tides and waves? What is the potential of these energy resources?

Or

- (b) Compare the various types of energy with respect to its sustainability for Indian conditions.
14. (a) What do you mean by sustainable development and how will you attain the sustainability?

Or

- (b) What is the concept of carbon credit and how it originated? How is carbon credit calculated? How does buying carbon credits reduce pollution?
15. (a) Enumerate and explain the various methods of carbon capture and sequestration.

Or

- (b) What is the importance of sustainable urbanization? Explain the components of sustainable urban development.

PART C — (1 × 15 = 15 marks)

16. (a) How can you, as a individual to prevent environmental pollution? Why such an effort at individual level is important?

Or

- (b) Identify and explain the present day major threats to the biodiversity of India. Explain the major in-situ strategies of conservation of biodiversity.