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Question Paper Code	13897
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B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2025

Seventh Semester

Civil Engineering

20CYOE907 – GREEN TECHNOLOGY

Regulations - 2020

Duration: 3 Hours

Max. Marks: 100

PART - A (MCQ) (10 × 1 = 10 Marks)

Answer ALL Questions

	<i>Marks</i>	<i>K- Level</i>	<i>CO</i>
1. Which of the following is not a principle of Cleaner Production (CP)? (a) Waste minimization (b) Resource optimization (c) Increased emission (d) Recycling and reuse	1	K1	CO1
2. The main objective of Industrial Ecology is to: (a) Maximize industrial waste generation (b) Minimize resource use and environmental impact (c) Increase energy consumption (d) Eliminate recycling processes	1	K2	CO1
3. The main purpose of a process flow diagram in cleaner production is to: (a) Illustrate energy balance (b) Show process sequence and material flow (c) Indicate economic feasibility (d) Represent ISO standards	1	K1	CO2
4. ISO 14000 series deals with: (a) Product quality (b) Environmental management systems (c) Energy auditing (d) Financial auditing	1	K2	CO2
5. The main objective of a waste audit is to: (a) Increase waste generation (b) Identify and minimize waste sources (c) Promote landfill disposal (d) Reduce energy efficiency	1	K1	CO3
6. The process of capturing and storing atmospheric carbon dioxide is called: (a) Carbon credit (b) Carbon trading (c) Carbon sequestration (d) Carbon offsetting	1	K2	CO3
7. Which of the following is a conventional energy resource? (a) Solar energy (b) Wind energy (c) Coal (d) Tidal energy	1	K1	CO4
8. The major environmental problem associated with the use of fossil fuels is _____ (a) Ozone layer formation (b) Global warming (c) Increase in soil fertility (d) Water desalination	1	K2	CO4
9. Which of the following is a green fuel? (a) Diesel (b) Biogas (c) Coal (d) Kerosene	1	K1	CO5
10. Which of the following is a biomass conversion process? (a) Fractional distillation (b) Fermentation (c) Electrolysis (d) Gasification	1	K2	CO5

PART - B (12 × 2 = 24 Marks)

Answer ALL Questions

11. Define Green Technology and mention its importance.	2	K1	CO1
12. List any four factors affecting the adoption of Green Technologies.	2	K1	CO1
13. Define Cleaner Production (CP) assessment.	2	K1	CO2

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| 14. What is meant by material balance in CP project implementation? | 2 | K1 | CO2 |
| 15. Recall the term carbon trading. | 2 | K1 | CO3 |
| 16. What is the purpose of an environmental statement in pollution prevention? | 2 | K1 | CO3 |
| 17. Differentiate between conventional and non-conventional energy resources. | 2 | K2 | CO4 |
| 18. State two major drawbacks of using fossil fuels. | 2 | K1 | CO4 |
| 19. What are the main challenges in adopting green fuels? | 2 | K2 | CO5 |
| 20. List out the environmental benefits of using green fuels. | 2 | K1 | CO5 |
| 21. Define geothermal energy. | 2 | K1 | CO5 |
| 22. What is meant by tidal energy? | 2 | K1 | CO5 |

PART - C (6 × 11 = 66 Marks)

Answer ALL Questions

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| 23. a) Describe the importance and historical evolution of Green Technology. | 11 | K2 | CO1 |
| OR | | | |
| b) Explain the role of industry, government, and institutions in Cleaner Production. | 11 | K2 | CO1 |
| 24. a) Explain the steps involved in Cleaner Production assessment and project implementation. | 11 | K2 | CO2 |
| OR | | | |
| b) Illustrate economic valuation and total cost analysis methods used in Cleaner Production projects. | 11 | K2 | CO2 |
| 25. a) Discuss the significance of carbon credit and carbon sequestration in achieving pollution prevention. | 11 | K2 | CO3 |
| OR | | | |
| b) Explain the principles, methodology, and elements of Life Cycle Assessment (LCA). | 11 | K2 | CO3 |
| 26. a) Summarize the environmental impacts of conventional energy resources and suggest possible remedies. | 11 | K2 | CO4 |
| OR | | | |
| b) Illustrate the working principle and applications of solar energy conversion devices with neat sketches. | 11 | K2 | CO4 |
| 27. a) Compare and contrast green fuels and conventional fossil fuels in terms of environmental, economic, and social impacts. | 11 | K2 | CO5 |
| OR | | | |
| b) Explain the concept of biomass energy utilization, types of biomasses, and conversion technologies. | 11 | K2 | CO5 |
| 28. a) Discuss the principles and benefits of cleaner production (CP). | 11 | K2 | CO1 |
| OR | | | |
| b) Explain how “Wealth from Waste” supports sustainable industrial practices. | 11 | K2 | CO1 |