Reg. No.															

Question Paper Code	13431

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

		Marks	K – Level	CO
1.	What is the primary goal of green technology? (a) To enhance industrial profit (b) To reduce environmental impact (c) To increase energy consumption (d) To create synthetic materials	1	K1	CO1
2.	Which of the following best describes Industrial Ecology? (a) The study of industrial systems aimed at finding strategies to reduce environmental impact (b) An engineering specialty aimed at generating more energy output (c) The study of forests and other natural environments to find ways to reduce and reuse natural resources (d) The study of turning previously infertile land into fertile land	1	K1	CO1
3.	Waste minimization it is the _____ step of Cleaner Production hierarchy (a) First (b) Second (c) Third (d) Fourth	1	K1	CO2
4.	On-site Reuse and Recovery is a part of which CP tool? (a) Waste reduction at source (b) Recycling (c) Product modification (d) All of the above	1	K1	CO2
5.	It is one method of reducing the amount of carbon dioxide in the atmosphere with the goal of reducing global climate change. (a) Carbon sequestration (b) Carbon credits (c) Carbon trade (d) None of the above	1	K1	CO3
6..	What are the four main steps in the Life Cycle Assessment (LCA) methodology? (a) Define goal and scope, Life cycle inventory stage, Life cycle impact assessment, Interpretation of the study (b) Define goal and scope, Product manufacturing, Distribution, End-of-life (c) Resource extraction, Product usage, Waste management, Interpretation of the study (d) Resource acquisition, Product distribution, Usage stage, Life cycle impact assessment	1	K1	CO3
7.	Which among the following is not a renewable source of energy? (a) Biomass energy (b)Solar energy (c) Hydro-power (d) Geothermal energy	1	K1	CO4
8.	Which renewable resource generates maximum power in India? (a) Wind (b) Solar (c) Geothermal (d) Biomass	1	K1	CO4
9.	From a long-term perspective, which of the following is a clear advantage of green fuels over fossil fuels? (a) Unlimited resource availability (b) Higher emissions of pollutants (c) Lower initial costs for extraction (d) Sustainability and renewability	1	K1	CO5
10.	What is the main product of anaerobic digestion in biomass energy systems? (a) Bio ethanol (b) Biogas (c) Biochar (d) Hydrogen	1	K1	CO5

PART - B (12 × 2 = 24 Marks)

Answer ALL Questions

11.	Write any two advantages of Green Technology?	2	K1	CO1
12.	State the primary goal of industrial ecology.	2	K1	CO1

13.	How does industrial ecology differ from traditional industrial practices?	2	K1	CO1
14.	Explain the Principles of Cleaner Production.	2	K2	CO2
15.	What is total cost analysis in cleaner production?	2	K1	CO2
16.	Show the cleaner production hierarchy.	2	K1	CO2
17.	Define Life Cycle Assessment.	2	K1	CO3
18.	What is carbon credit?	2	K1	CO3
19.	Define non-conventional energy sources and give one example.	2	K1	CO4
20.	What is Solar Energy?	2	K1	CO4
21.	How do green fuels differ from fossil fuels in terms of environmental impact?	2	K1	CO5
22.	Define geothermal energy.	2	K1	CO5

PART - C (6 × 11 = 66 Marks)

Answer ALL Questions

23.	a)	Briefly describe the historical evolution and importance of green technology.	11	K2	CO1
		OR			
	b)	Explain the factors which will affect the implementation of Green Technologies in industry.	11	K2	CO1
24.	a)	Discuss the principles followed in implementing cleaner production in Industry/Organization.	11	K2	CO2
		OR			
	b)	Discuss the concept of reuse, recovery and raw material substitution in the cleaner production of construction products with suitable example.	11	K2	CO2
25.	a)	Explain the term life cycle assessment in detail with suitable a case study.	11	K2	CO3
		OR			
	b)	Illustrate Eco labeling of a product and its advantages with an example.	11	K2	CO3
26.	a)	What is meant by renewable energy sources? Explain in brief these energy sources with special reference to Indian context.	11	K2	CO4
		OR			
	b)	Describe about the major Environmental problems related to Conventional Energy Resources.	11	K2	CO4
27.	a)	Define biomass energy and discuss the different types of biomass that can be used for energy production.	11	K2	CO5
		OR			
	b)	Discuss geothermal energy as a source of renewable energy. Explain the energy conversion technologies used in geothermal energy production and their applicability in India.	11	K2	CO5
28.	a) (i)	Describe about the major Environmental problems related to Conventional Energy Resources.	5	K2	CO4
	(ii)	Explain the concept of green fuels and discuss their potential benefits.	6	K2	CO5
		OR			
	b) (i)	Discuss briefly about solar cells.	5	K2	CO4
	(ii)	What are the advantages and disadvantages of wind conversion?	6	K2	CO5