QP Code: RA22BTECH426 | Reg. No | | | | | | | | | | | AR21/22

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET University)

B. Tech (Sixth Semester – Regular/Supplementary) Examinations, April 2025

21BELPC36004/21BEEPC36004 / 22BELPC36004/22BEEPC36004 – Energy Management and Auditing

(EE & EEE)

Time: 3 hrs | Maximum: 70 Marks

Answer ALL questions

(The figures in the right-hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** questions		CO #	Blooms Level
a.	Define primary and secondary energy with two examples for each	CO1	K1
b.	How does air pollution affect the environment?	CO1	K1
c.	What are the advantages of energy conservation applicable to an industry?	CO2	K2
d.	Describe maximum demand control and its importance	CO2	K2
e.	What are the advantages of improving power factor?	CO3	K2

PART – B **(15 x 4 = 60 Marks)**

Answer ***all the*** questions		Marks	CO #	Blooms Level
2. a.	Apply your understanding to elaborate the impacts of climate change on energy usage patterns.	8	CO1	K3
b.	Enumerate the advantages of energy conservation and explain its importance.	7	CO1	K1
	(OR)			
c.	Explain the salient features of the Energy Conservation Act, 2001 and describe its relevance to current energy policies.	8	CO1	K2
d.	Describe the concepts of global warming and the greenhouse effect, and explain their interrelation.	7	CO1	K2
3.a.	Explain the different types and phases of an energy audit with suitable examples	8	CO2	K2
b.	Define an energy audit and state its need in the context of energy efficiency.	7	CO2	K1
	(OR)			
c.	Describe the step-by-step process of preparing a detailed energy audit report and explain its components.	8	CO2	K2
d.	Apply your knowledge to explain the role and importance of energy audit instruments in identifying energy-saving opportunities.	7	CO2	K3
4.a.	Illustrate the electrical power supply system using a simple line diagram, from generation to end-user distribution.	8	CO3	K2
b.	Explain the billing process of a HT consumer and describe the key billing components	7	CO3	K2
	(OR)			
c.	Explain the need for electrical load management and outline the step-by-step approach for maximum demand control.	8	CO3	K2
d.	Analyze the concept of power factor improvement and discuss its benefits with an example.	7	CO3	K2

5.a.	Analyze the role of Variable Frequency Drives (VFDs) in industry and examine their advantages in energy savings and process optimization	8	CO4	K4
b.	Compare and describe the energy-saving potential of different technologies used in domestic and industrial applications.	7	CO4	K2
	(OR)			
c.	Apply your knowledge to explain the working of soft starters and describe their main functional features	8	CO4	K3
d.	Explain how energy-efficient lighting control systems improve the overall performance of the power distribution system	7	CO4	K2

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