R20 Regulation *Subject code:3E6BA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech VI Semester Supplementary Examinations, May 2025

ELECTRICAL ENERGY CONSERVATION AND AUDITING

(EEE)

Maximum Marks: 70 Date: 25.06.2025 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10X2M=20 Marks)		Marks	CO	BTL
1	What is the primary difference between commercial and non-commercial energy sources?	2M	1	L1
2	Define energy conservation.	2M	1	L1
3	What is load management?	2M	2	L1
4	Define calorific value.	2M	2	L1
5	What is an energy audit?	2M	3	L1
6	What is fuel and energy substitution in energy management?	2M	3	L1
7	How does maximum demand control help in reducing electricity costs?	2M	4	L1
8	How is the performance of power factor capacitors assessed?	2M	4	L1
9	What are the two main types of fans used in industrial applications?	2M	5	L1
10	How much energy savings can be typically achieved with energy-efficient lighting controls?	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Develop a long-term energy scenario for India considering factors such as population growth, technological advancements, and policy changes.	10M	1	L2
	OR			
12	Analyze in detail the Energy conservation Act 2001and its features.	10M	1	L2
13	Discuss the concept of load management and maximum demand control in electrical power systems. Why are these strategies important for both utilities and consumers?	10M	2	L2
	OR			
14	Analyze the thermal characteristics of different types of fuels used for energy production.	10M	2	L2
15	Analyze the concept of maximizing system efficiencies in energy management. Discuss the various strategies that can be used to achieve higher efficiency in energy systems.	10M	3	L2
	OR			

16	Describe the various instruments used in energy audits.	10M	3	L2
17	Describe the concept of electrical load management and maximum demand control. Discuss the methods used to manage electrical loads and control maximum demand,	10M	4	L2
	OR			
18	Analyze the criteria for selecting capacitors for power factor correction.	10M	4	L2
19	Explain various flow control strategies for fans and blowers and discuss how each strategy impacts system efficiency and energy consumption.	10M	5	L2
	OR			
20	a.Describe different types of air compressors. b.Explain Compressor efficiency and efficient compressor operation.	5M 5M	5	L2