R18 Regulation *Subject code:2E6BA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, November 2025

ELECTRICAL ENERGY CONSERVATION AND AUDITING (EEE)

Maximum Marks: 70 Date: 15.11.2025 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	Outline the process of commercial energy production from fossil fuels. What are the environmental implications of each step?	10M	1	L2
	OR			
12	Define energy security. What are the main threats to energy security, and how can countries mitigate these risks?	10M	1	L2
13	Describe how the thermal energy content of a fuel is determined and why it is a critical factor in fuel selection for energy production.	10M	2	L2
	OR			
14	Analyze the thermal characteristics of different types of fuels used for energy production.	10M	2	L2
15	Discuss the concept of fuel and energy substitution in energy management. Explain the benefits.	10M	3	L2
	OR			

16	Describe the concept of demand side management (DSM) and its role in energy management.	10M	3	L2
17	Discuss the different components of an electricity bill and explain how each component affects the overall cost of electricity for industrial and commercial consumers.	10M	4	L2
	OR			
18	Analyze the types of losses that occur in electrical distribution systems and transformers.	10M	4	L2
19	Analyze the key parameters and methods used for evaluating the performance of fans and blowers.	10M	5	L2
	OR			
20	Analyze various energy-efficient lighting control technologies and explain how each technology contributes to energy savings and improved lighting quality.	10M	5	L2