

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL/MAY 2026***Fifth Semester**Electrical and Electronics Engineering***EE3001 - Utilization and Conservation of Electrical Energy***Regulations - 2021**Duration : 3 Hrs**Maximum : 100 Marks***PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	Define an electric drive.	L2	1	2
2.	List two components of track equipment.	L1	1	2
3.	Define the term "lumen" in illumination engineering.	L2	2	2
4.	Mention two environmental benefits of LED lighting.	L1	2	2
5.	Specify two advantages of electric heating over traditional methods.	L2	3	2
6.	Differentiate dielectric heating from resistance heating.	L2	3	2
7.	Specify features of the Energy Conservation Act 2001.	L2	4	2
8.	What is power factor controller?	L2	4	2
9.	Sketch online UPS.	L2	5	2
10.	Differentiate substation earthing requirements.	L2	5	2

PART - B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Discuss the criteria for choosing an electric motor for a specific application in traction systems.	L2	1	16
	Or			
	b Explain the working of track equipment and collection gear in a railway electrification system.	L2	1	16
12.	a i Discuss the classification of light sources and their suitability for different applications.	L2	2	8
	ii Analyze the applications of mercury vapor lamps in industrial settings.	L3	2	8
	Or			
	b i Describe the safety and aesthetic considerations in designing street lighting systems.	L2	2	8
	ii Analyze the design considerations for energy-saving lighting in residential buildings.	L3	2	8
13.	a Examine modes of heat transfer influencing electric heating efficiency.	L3	3	16
	Or			
	b Analyze the importance of stable power supply in arc welding quality.	L3	3	16

14.	a	Discuss industrial energy conservation strategies in electrical industries.	L2	4	16
		Or			
	b	Explain the role of power factor controllers in industrial energy management.	L2	4	16
15.	a	Explore house wiring techniques in residential buildings.	L4	5	16
		Or			
	b	Investigate earthing systems designed for domestic and industrial environments.	L4	5	16