

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***M.E DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 2025***Third Semester***Power Systems Engineering****OME434 - Electric Vehicle Technology****Regulations - 2021****Duration : 3 Hrs****Maximum Marks: 100****PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

Q.No	Questions	BLT	CO	Marks
1.	Compare electric and hybrid vehicles.	L2	1	2
2.	Give the limitations of electric vehicles.	L2	1	2
3.	Write the role of a traction motor in electric vehicles.	L1	2	2
4.	Specify the meaning for range extended hybrid electric vehicle.	L1	2	2
5.	Distinguish specific energy and specific power in storage devices.	L2	3	2
6.	State the significance of ultra-capacitors used in electric vehicles.	L1	3	2
7.	Differentiate AC electric and DC electric drives.	L2	4	2
8.	Mention the advantages of induction motor drives.	L1	4	2
9.	Define motor sizing in electric vehicle design.	L1	5	2
10.	Outline the characteristics of ideal gear box.	L2	5	2

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

Q.No	Questions	BLT	CO	Marks
11.	a Describe the impact of modern drive trains on global energy supplies in detail with examples.	L2	1	16
	Or			
	b Compare and analysis diesel, petrol, electric, and hybrid vehicles in terms of performance, efficiency, cost and environmental impact.	L2	1	16
12.	a Discuss the tractive effort and transmission requirements for electric vehicles in detail.	L2	2	16
	Or			
	b Discuss the architecture of series and parallel hybrid electric drive trains with their features.	L2	2	16
13.	a List the types of energy storage batteries and explain them in detail.	L2	3	16
	Or			
	b Compare the types of battery charging techniques and explain them in detail.	L2	3	16

14.	a	Describe the working principle o AC and DC electrics drives with their characteristics.	L2	4	16
Or					
	b	Describe the different motor speed controllers used in electric drive systems.	L2	4	16
15.	a	Discuss the factors influencing acceleration performance, maximum tractive effort and gradability in electric vehicles.	L2	5	16
Or					
	b	Discuss the features of electronic control systems in electric vehicles in detail.	L2	5	16