

Code: 20EE4702B

IV B.Tech - I Semester – Regular Examinations - DECEMBER 2023

**ELECTRICAL VEHICLES
(ELECTRICAL & ELECTRONICS ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.

2. All parts of Question must be answered in one place.

BL – Blooms Level

CO – Course Outcome

			BL	CO	Max. Marks
UNIT-I					
1	a)	Discuss environmental importance of hybrid electric vehicles.	L1	CO1 CO3	7 M
	b)	Write a short note on History of electric vehicles.	L1	CO1 CO2	7 M
OR					
2	a)	Briefly explain the basics of vehicle parameters.	L1	CO1 CO2	7 M
	b)	Discuss air pollutants and global warming of electric vehicles.	L3	CO1 CO3	7 M

UNIT-II

3	a)	Write a short note on vehicle performance.	L1	CO1 CO2	7 M
	b)	Write a short note on tractive effort in normal driving of electric vehicles.	L2	CO1 CO4	7 M

OR

4		Discuss the configuration of Electric vehicles.	L3	CO4	14 M
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UNIT-III

5		With neat sketch, Explain the speed coupling parallel hybrid electric drive trains.	L1	CO4	14 M
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OR

6		Discuss the series hybrid electric drive trains in detail and also its Power flow control.	L3	CO4	14 M
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UNIT-IV

7	a)	Write a short note on fuel and oxidant consumption in a fuel cell.	L2	CO3	7 M
	b)	Briefly explain the fuel Supply.	L2	CO2	7 M

OR

8		Infer various fuel cell technologies.	L4	CO3	14 M
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UNIT-V

9	a)	Discuss the basic principles of electro-chemical batteries.	L3	CO3	7 M
	b)	Illustrate specific power and energy efficiency of an electro chemical battery.	L3	CO3	7 M

OR

10	a)	Illustrate Ultra capacitors in detail.	L3	CO3	7 M
	b)	Discuss the hybridization of energy storage in battery vehicles.	L2	CO3	7 M