

Code: 20EE6401

II B.Tech - II Semester – Regular Examinations – MAY 2023**BATTERY MANAGEMENT SYSTEM
(HONORS in 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)	Explain the difference between cell and battery. Explain the ideal battery voltage for EVs?	L2	CO1	7 M
	b)	Explain State of Charge, Charge Capacity, Energy Density and Specific Power of battery.	L2	CO1	7 M
OR					
2		Relate how battery temperature affects the battery life in lithium-ion batteries, what is the ideal temperature range for lithium-ion batteries and why cooling is needed for battery?	L2	CO1	14 M

UNIT-II

3	Compare Nickel based batteries with Lead Acid Batteries.	L4	CO2	14 M
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OR

4	Analyze the characteristics of lead acid batteries.	L4	CO2	14 M
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UNIT-III

5	Explain a comparative analysis between Aluminum air batteries and Zinc air batteries with its construction and working advantages while usage in EVs.	L2	CO2	14 M
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OR

6	Explain briefly about Zebra batteries and LI-PO Batteries with its application areas.	L2	CO2	14 M
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UNIT-IV

7	Analyze the Importance and working of fast charging technology with public charging Infrastructure.	L4	CO2	14 M
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OR

8	Illustrate the battery swapping technology in EVs. List the advantages and disadvantages of this technology in 2 wheelers and 4 wheelers.	L2	CO2	14 M
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UNIT-V

9	Illustrate the principle of inductive charging.	L2	CO3	14 M
OR				
10	Outline the arrangements of offboard conductive charger and its various power level.	L2	CO3	14 M