Reg. No. : | | | | | | | | | | |

Question Paper Code: 97302

B.E./B.Tech. DEGREE EXAMINATION, NOV 2022

Seventh Semester

Electrical and Electronics Engineering

19UEE702- ELECTRIC VEHICLES

(Regulations 2019)

Duration: Three hours Maximum: 100 Marks

Answer All Questions

PART A - (10x 2 = 20 Marks)

1.	What is meant by a series hybrid electric vehicle?	CO1- U
2.	What are the environmental impacts of Electric Vehicle?	CO1- U
3.	What is the sizing of propulsion motor?	CO2- U
4.	Which component in EV is used for propulsion?	CO2- U
5.	Mention the drawbacks of NiMH battery	CO3- U
6.	What is the source of energy storage in electric vehicle?	CO3- U
7.	Sketch the flowchart for Battery Management System which includes Hardware and Software	CO4- U
8.	Which Energy storage system is popular among other energy storage systems? Why?	CO4- U
9.	What is vehicle to grid technology	CO5- U
10.	Write short notes about Plug-in electric vehicles	CO5- U

PART – B (5 x 16= 80Marks)

11.	(a)	Explain in detail about configuration and control of brushless DC motor drive in Electric Vehicle	CO1- U	(16)
		Or		
	(b)	Explain in detail about configuration and control of Induction motor drive in Electric Vehicle	CO1- U	(16)

12.	(a)	Explain in detail the electric components used in hybrid and electric vehicles	CO2- U	(16)
		Or		
	(b)	Explain in detail about configuration and control of brushless DC motor drives.	CO2- U	(16)
13.	(a)	Explain in detail about Fuel Cell based energy storage and its analysis in Electric Vehicles.	CO3- U	(16)
		Or		
	(b)	Examine the hybridization of different energy storage devices in Electric Vehicles.	CO3- U	(16)
14.	(a)	Explain in detail about battery cell monitoring system and also analyze its current and voltage.	CO4- U	(16)
		Or		
	(b)	Explain in detail about power, temperature and heat management in storage system.	CO4- U	(16)
15.	(a)	Explain in detail about optimal strategies in home energy management system (HEMS) integrating solar power, energy storage, and vehicle-to-grid	CO5- U	(16)
		Or		
	(b)	Explain in detail about Communication & networking: Data storage and acquisition in Electric Vehicle and also explain Electric Vehicle drive train	CO5- U	(16)