Name: Enrolment No:	UPES UNIVERSITY OF TOMORROW

End Semester Examination, December 2024

Program Name: B.Tech. ADE **Semester : V**
Course Name: Hybrid and Electric Vehicles **Time : 3 Hrs**
Course Code: MEAD 3038 **Max. Marks: 100**
Nos. of page(s): 01

Instructions: 1. Answer all question in proper order, 2. Make suitable assumptions (if any needed)

Section A-20 Marks

S. No.		Marks	CO
Q 1	Suggest some important features of future EVs.	**5**	**1**
Q 2	Highlight any newer safety concerns with respect to EVs.	**5**	**1**
Q 3	What do you understand by range anxiety in reference with EVs	**5**	**2**
Q 4	Explain the concept of hybridization in Vehicles.	**5**	**2**
	Section B- 40 Marks (Answer Any four)		
Q 5	Differentiate between Battery Management System (BMS) and Thermal Management System (TMS) of an EV.	**10**	**2**
Q 6	Enumerate the significance of noise and harness in EVs, how can it be eliminated.	**10**	**2**
Q7	Explain the principal of reluctance? How reluctance motors work. With the help of a neat diagram explain the functioning of reluctance motors in EVs	**10**	**2**
Q8	EVs comes with drive by wire technology, What advantage does it presents in EVs	**10**	**3**
Q 9	What is conformity of production (COP)? Write short notes on the following a. COP for Batteries in EVs b. COP for EMC in EVs	**10**	**3**
	Section C-40 marks (Answer Any two)		
Q10	Draw and explain the following hybrid vehicle configurations (a) Parallel, (b) Series, and (c) Power-split (Parallel/series)	**20**	**2**
Q11	Autonomous cars are future of EVs. How the levels of autonomy are defined and Discuss in detail the different autonomous features in EVs.	**20**	**3**
Q12	Discuss the overall environmental impact of EVs. What are the factors which are contributing to overall higher carbon foot prints in environment by EVs	**20**	**3**

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