

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(MID SEMESTER EXAMINATION)**

**CLASS: B.TECH  
BRANCH: EEE**

**SEMESTER: VII  
SESSION: MO/2022**

**SUBJECT: EE585 HYBRID ELECTRIC VEHICLE**

**TIME: 2 HOURS**

**FULL MARKS: 25**

**INSTRUCTIONS:**

1. The total marks of the questions are 25.
  2. Candidates attempt for all 25 marks.
  3. Before attempting the question paper, be sure that you have got the correct question paper.
  4. The missing data, if any, may be assumed suitably.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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			CO	BL
Q1 (a)	Discuss the environmental importance of EV and their social impacts.	[2]	CO1	BL2
Q1 (b)	Draw and explain the ideal performance characteristics for a vehicle traction power plant.	[3]	CO1	BL2
Q2 (a)	Analyze the different factor involved in the braking performance of the vehicle.	[2]	CO1	BL3
Q2 (b)	Identify the different factors effect the movement of vehicle.	[3]	CO1	BL3
Q3 (a)	Organize the building blocks of automobile power train system.	[2]	CO1	BL3
Q3 (b)	Apply the basic automobile knowledge to write the expression for dynamic equation of vehicle.	[3]	CO1	BL3
Q4 (a)	Differentiate between traction and propulsion.	[2]	CO1	BL3
Q4 (b)	Construct the concept of power train system of a vehicle with neat sketch also to derive the expression for vehicle speed.	[3]	CO1	BL3
Q5 (a)	What are the techniques to improve vehicle fuel economy?	[2]	CO1	BL1
Q5 (b)	Draw and explain the fuel economy characteristics of a typical gasoline engine.	[3]	CO1	BL2

::: 26/09/2022 :::M