

Total No. of Questions : 8]

SEAT No. :

PC1754

[Total No. of Pages : 2

[6353]-72

T.E. (Electrical Engineering)

ELECTRICAL MOBILITY

(2019 Pattern) (Semester - II) (Elective-II) (303151B)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Attempt Q1 or Q2, Q3 or Q4, Q5 or Q6 and Q7 or Q8.
- 2) Neat diagrams must be drawn whenever necessary.
- 3) Figures to the right indicates full marks.
- 4) Use of Calculator is allowed.
- 5) Assume suitable data if necessary.

Q1) a) Why Balancing of cells is required in battery? Explain any two Active cell balancing method with neat diagram. [9]

b) Explain Constant current charging algorithm used in battery charging. [8]

OR

Q2) a) State various SOC estimation methods used in batteries, Explain any two methods. [9]

b) Draw block diagram of Battery Management System and explain it. [8]

Q3) a) Draw and Explain Antilock Brake System In Electric vehicle. [9]

b) Draw Control Architecture of HEV and all electronic control systems. [9]

OR

Q4) a) Explain energy consumption of Electric Vehicle in braking. [9]

b) Draw schematic diagram of series HEV drive train and explain its working. [9]

Q5) a) Write a note on sizing the motor for electric hybrid vehicles. [9]

b) Write KW rating of Charging levels 1, 2 and 3 (A.C, D.C.) and state applications. [8]

OR

Q6) a) Explain BLDC drives for HEV and list advantages of it. [9]

b) Write note on battery swapping. [8]

P.T.O.

- Q7)** a) Compare V2H, V2V and V2G (any 3 points). [9]
b) Explain V2G concept and state advantages of V2G. [9]

OR

- Q8)** a) Draw Flowchart for EV Charging Infrastructure and explain it. [9]
b) Draw and Explain Diagram for modeling of V2G ancillary services. [9]

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