SEAT No. :

P-7571

[6180]-86
T.E. (Electrical)
ELECTRICAL MOBILITY
(2019 Pattern) (Semester - II) (303151B) (Elective - II)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates :

1) *Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Figures to the right indicates full marks.*
4) *Use of Calculator is allowed.*
5) *Assume Suitable data if necessary.*

Q1) a) Draw block diagram of Battery Management System and explain it. **[9]**

b) Explain in detail the thermal management of battery **[8]**

OR

Q2) a) Explain Constant voltage charging algorithm used in battery charging.**[9]**

b) List the methods of SOC estimation and explain any two in detail **[8]**

Q3) a) Draw schematic diagram of parallel HEV drive train and explain its working. **[9]**

b) Write notes on : **[9]**
   i) Energy Consumption in Braking
   ii) Regenerative braking

OR

Q4) a) Explain in detail the Brake System of EVs and HEVs **[9]**

b) Explain with the help of block diagram the Control Strategies Series Hybrid Electric Drive. **[9]**

Q5) a) Explain BLDC drive with advantages and disadvantages. **[9]**

b) Write notes on following charging Standards: **[8]**
   i) CCS
   ii) CHAdeMO,

OR

P.T.O.

Q6) a) Explain PMSM drive with advantages and disadvantages **[9]**

b) Write notes: **[8]**

i) Electric Vehicle Supply Equipment (EVSE).

ii) Bharat DC 001, Bharat AC 001

Q7) a) Explain in brief the concept of Vehicle to Home **[9]**

b) Write a note on role of aggregator for V2G **[9]**

OR

Q8) a) Explain the concept of V2G and advantages of V2G **[9]**

b) Explain the concept and structure of Vehicle to Vehicle **[9]**

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