Total No. of Questions : 8]

SEAT No. :

P3915

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[5561]-585

B.E. (Electrical)

ELECTRIC AND HYBRID VEHICLES

(2015 Pattern) (Semester-I) (Elective-II) (403144D)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right indicate full marks.***
3) ***Solve Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.***
4) ***Assume suitable data, if necessary.***

Q1) a) Explain different charging algorithm and balancing method for battery pack charging. **[12]**

b) Explain Hybridization of drive trains in HEV's. **[8]**

OR

Q2) a) Explain battery-based energy storage and its analysis in detail. **[10]**

b) Explain Needs and Importance of transportation development. **[10]**

Q3) a) Explain concept and architecture of HEV drive train. **[10]**

b) Explain advantages and challenges in Electric Vehicle design. **[6]**

OR

Q4) a) Explain different components and configuration of Electric Vehicles. **[10]**

b) Explain need of Energy consumption in EV and HEV. **[6]**

P.T.O.

Q5) a) Explain Performance characteristics of BLDC drives. **[10]**

b) Compare BLDC drive and Switched reluctance motor drive for HEV & EV. **[8]**

OR

Q6) a) Explain the concept of vehicle tracking through GPRS. **[8]**

b) Explain in detail Instrumentation and control system of Hybrid and Electric Vehicles. **[10]**

Q7) a) Explain the concept & structure of EV aggregator in vehicle to vehicle energy systems. **[8]**

b) Explain in details PHEV control strategies in Vehicle to home energy systems. **[8]**

OR

Q8) a) Explain in details planning of vehicle to Grid infrastructure in the smart grid. **[8]**

b) Explain different control method for EV aggregator for dispatching a feet of EV. **[8]**