Total No. of Questions : 08]

SEAT No. :

P3323

[Total No. of Pages :2]

[5461] - 580 - A

B.E. (Electrical)

ELECTRIC AND HYBRID VEHICLES

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

Time : 2 ½ 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, and Q7 or Q8.***
4) ***Assume suitable data, if necessary.***

Q1) a) Which are the various parameters that determines the performance of the vehicle. **[6]**

b) Explain with the neat diagram working & components of Fuelcell vehicle. **[8]**

c) What is Battery Management System ? Explain functions of BMS. **[6]**

OR

Q2) a) Write a short note on Ultra capacitor. **[6]**

b) What is SoC? Explain any method for estimation of SoC. **[6]**

c) Which are the different cell balancing methods? Explain any one with diagram. **[8]**

Q3) a) Energy consumption of Electric Vehicle. **[8]**

b) Explain various hybrid drive train. **[8]**

OR

Q4) a) Which are the different challenges for EV design. **[8]**

b) Explain in detail Tractive Effort of electric vehicle. **[8]**

P.T.O.

Q5) a) Explain GPS tracking of Electric Vehicle. **[8]**

b) Draw & explain Switch Reluctance Motor. **[8]**

OR

Q6) a) Explain working BLDC motor with diagram. **[6]**

b) Explain auto parking system. **[4]**

c) Compare Electric and Hydralic steering. **[6]**

Q7) a) Which are the various PHEV control strategies? Explain any one in detail. **[6]**

b) Describe control method for EV aggregator for dispatching a fleet of EV. **[8]**

c) Explain concept of Vehicle to Vehicle. **[4]**

OR

Q8) a) Write short note on Vehicle to Grid. **[8]**

b) Explain Vehicle to Home. **[6]**

c) Explain demand response for EV. **[4]**

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