Total No. of Questions : 6]

SEAT No. :

P226

[Total No. of Pages : 2

Oct./BE/Insem. - 542
B.E. (Electrical)
ELECTRIC AND HYBRID VEHICLES
(2015 Course) (Semester - I) (403144 D) (Elective - II)

Time : 1 Hour] *[Max. Marks :30*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right indicate full marks.***
3) ***All questions carry equal marks.***
4) ***Assume Suitable data, if necessary.***

Q1) a) Draw & explain fuel cell Electric Vehicles. **[6]**

b) Explain hybrid electric vehicle & its components. **[4]**

OR

Q2) a) Why there is a need for hybrid energy storage? Explain different combination. **[6]**

b) Explain various factors which determines performance of vehicle. **[4]**

Q3) a) What is Flywheel energy storage? Explain challenges associated with it. **[6]**

b) Which are the factors to be considered while selecting energy storage device? **[4]**

OR

Q4) a) Explain working principle & benefits of Ultra-capacitor energy storage. **[4]**

b) Which are the various Hybrid drive train topologies? **[6]**

P.T.O.

Q5) a) Why Balancing of cells is required in battery? Explain Active cell balancing method. **[6]**

b) What is Battery Management System? Explain its function. **[4]**

Q6) a) Explain thermal monitoring of battery unit. **[6]**

b) How to estimate battery SoC? **[4]**