

Total No. of Questions : 6]

SEAT No. :

P5872

[Total No. of Pages : 1

**BE/Insem./Oct.-568**

**B.E. (Electrical)**

**ELECTRIC AND HYBRID VEHICLES**

**(2015 Pattern) (Elective - II) (Semester - I)**

**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) Explain History of Electric Vehicle . [4]  
b) Explain need and importance of transportation development. [6]

OR

- Q2)** Explain basic of vehicle performance with its characterization. [10]

- Q3)** a) Explain Battery based energy storage and its analysis. [5]  
b) Explain Ultra capacitor based energy storage and its analysis. [5]

OR

- Q4)** Explain Hybridization of energy storage for Hybrid and Electric Vehicles. [10]

- Q5)** Explain charging algorithm and balancing method for battery pack charging. [10]

OR

- Q6)** a) Explain Thermal monitoring of battery unit. [4]  
b) Explain Battery management system representation. [6]

