

Exam.Code:1018
Sub. Code: 7466 ✓

2054

M.E. Electrical Engineering (Power System)
Second Semester

EE-8205(b): Hybrid and Electric Vehicles ✓

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt any five questions. All questions carry equal marks.

x-x-x

- I. Define hybrid electric vehicles. How they differ from conventional vehicles. What are the different challenges in these vehicles.
- II. Explain the series hybrid electric drive trains. What is the impact of modern drive trains on energy supplies.
- III. Define tractive force in EVs. Draw its Traction Motor characteristics. Also write and explain the dynamic equation of the vehicle.
- IV. Explain and draw the block diagram of switched reluctance motor drive system.
- V. Explain the battery based energy storage and state its advantages and disadvantages.
- VI.
 - a) Define gradeability and rolling resistance for EVs.
 - b) How rolling resistance coefficient is a function of tyre material and temperature.
- VII. Mention the purpose of EV standards. What are the various challenges of electrification that are faced in EVs.
- VIII. Write short notes on:-
 - a) Combined charging systems
 - b) European EV Plug standards

x-x-x