

**DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY,
LONERE – RAIGAD -402 103
Winter Semester Examination – December - 2019**

Branch: Electrical Engineering

Sem.:- V

Subject:- Electrical Mobility (BTEEOE506A)

Marks:60

Date:-18/12/2019

Time:- 3 Hr.

Instructions to the Students

1. Each question carries 12 marks.
2. Attempt **any five** questions of the following.
3. Illustrate your answers with neat sketches, diagram etc., wherever necessary.
4. If some part or parameter is noticed to be missing, you may appropriately assume it and should mention it clearly

		(Marks)
Q.1.		
	a) State and explain classification of electrical mobility.	(6)
	b) Explain operating principle of types of hybrid electric vehicle.	(6)
Q.2.		
	a) Compare types of batteries used in electrical mobility.	(6)
	b) Enlist and explain any four battery parameters in detail.	(6)
Q.3.		
	a) Explain and enlist the types of electrical machines used in electric mobility.	(6)
	b) Draw and explain Brushless DC Motor with characteristics.	(6)
Q.4.		
	a) Draw and explain single phase inverter with its waveforms based on PWM switching sequence.	(6)
	b) Draw and explain Buck and Boost converter used in electric mobility.	(6)
Q.5.		
	a) Derive expression for tractive effort while vehicle modelling.	(6)

	b)	What are the criteria of electric vehicle chassis or body modelling and design?	(6)
Q.6.			
	a)	Explain global warming and show characteristics by carbon dioxide emission in atmosphere due to multiple applications from duration 1980 to 1999.	(6)
	b)	Explain air pollution in detail and gases produced by hydrocarbon fuel.	(6)
PAPER END			