Total No. of Questions : 8]

SEAT No. : ____

P-7783

[Total No. of Pages : 2

[6180]-332

T.E. (Honors) (Mechanical/Electrical)

E-VEHICLE SYSTEM DESIGN

(2019 Pattern) (Semester - II) (302033MJ)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***Answer Four questions from the following (Q.No. 1 or Q2, Q.3 or Q4, Q5 or Q6, Q.7 or Q.8)***
2) ***Draw neat labeled diagrams wherever necessary***
3) ***Figures to the right side indicate full marks.***
4) ***Use of non-programmable electronic calculator is permitted.***
5) ***Assume Suitable/Standard data if necessary.***

Q1) a) Explain Regenerative braking system. **[8]**

b) Explain Topology design of wheels. **[9]**

OR

Q2) a) Classify and Explain wheels and Braking System. **[8]**

b) Explain vehicle and body centre of gravity for movement design of e-vehicles. **[9]**

Q3) a) Explain Powertrain in e-vehicle. **[8]**

b) Explain four wheel drive layout design. **[9]**

OR

Q4) a) Explain Transmission system in e-Vehicle. **[8]**

b) What is differential system and mention its types? **[9]**

Q5) a) Explain constructional details of batteries (battery pack structure). **[9]**

b) Write short note on : **[9]**

i) Vent management system

ii) Pack cooling system

P.T.O.

OR

Q6) a) Explain Battery compartment. **[9]**

b) Write short note on : **[9]**

i) Battery life analysis

ii) Battery performance degradation

Q7) a) Explain vehicle dynamics of EV. **[9]**

b) Explain crash analysis of EV. **[9]**

OR

Q8) a) Explain ergonomic design of roll cage frame. **[9]**

b) How optimization technique used in ergonomics design in EV. **[9]**