Total No. of Questions : 4]

SEAT No. :

PB-328

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B.E. (Mechanical Engineering) (Insem)

ELECTRICAL AND HYBRID VEHICLE

(2019 Pattern) (Semester - VIII) (402051 E) (Elective - VI)

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

Instructions to the candidates:

1) ***Solve Q.1 or Q.2, Q.3 or Q.4.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Use of electronic pocket calculator is allowed.***
5) ***Assume suitable data, if necessary.***

Q1) a) Explain the limitations of IC engine vehicles compared to electric vehicles. **[7]**

b) Explain about the social and environmental impacts of EV and HEV. **[8]**

OR

Q2) a) Write a note on overview of EV challenges. **[7]**

b) Write a note on self-driving vehicles & classify autonomous vehicle driving. **[8]**

Q3) a) Differentiate between conventional and smart grid electric vehicle based on definition, assembly set up, power generation, communication devices, direction of flow of electricity, protection and control system? **[6]**

b) Describe and explain the classification of conventional HEV. **[9]**

OR

Q4) a) Write a short note on fuel efficiency analysis. **[6]**

b) What is meant by power flow in HEV? Explain with neat sketch the various power flow control modes for a series hybrid electric vehicle. **[9]**

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