

B

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER M.TECH DEGREE EXAMINATION, DEC 2017
Electrical & Electronics Engineering
(Electrical Machines, Control Systems, Guidance and Navigational Control)
01EE7315 Hybrid Electric Vehicles

Max. Marks: 60

Duration: 3 hours

Answer any two FULL questions from each part

Part – A

1. a) What are the components of a hybrid electric vehicle? (5)
b) What are the advantages of hybrid electric vehicles as compared to conventional vehicles? (4)
2. Explain the economic and environmental impact of hybrid electric vehicle? (9)
3. Describe the general configuration of electric vehicle with block diagram (9)

Part – B

4. Explain the configuration and control of Induction Motor drives? (9)
5. What are the different classification of battery based energy storage devices? Explain each with its nominal battery parameters? (9)
6. What are the different alternative energy sources available? Explain? (9)

(P T O)

Part – C

7. Explain the design of HEV with a case study? (12)
8. a) What is Computer Area Network? What are its characteristics? (5)
b) With a neat diagram explain the working principle of CAN?. (7)
9. Explain the control system for vehicle speed control? Give a brief description of different types of ECU in vehicle? (12)
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