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**Question Paper Code: U3405**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2024

Professional Elective

Electrical and Electronics Engineering

21EEV405 -TESTING OF ELECTRIC VEHICLES

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer All Questions

PART A - (10 x 2 = 20 Marks)

1. Highlight the history of hybrid electric vehicle. CO1 -U
2. What are the major challenges facing implementation of hybrid and electric vehicle? CO1 -U
3. List out different types of Batteries. CO1 -U
4. What are the common problems associated with lead acid batteries? CO1 -U
5. What are the applications of DC motors in electric vehicle? CO1 -U
6. Why series motor cannot be started on no-load? CO1 -U
7. What are the main components in the electric vehicle? CO1 -U
8. Define electric control system. CO1 -U
9. List the most important component of the hybrid vehicle. CO1 -U
10. What is the difference between series and parallel hybrid? CO1 -U

PART – B (5 x 16= 80 Marks)

11. (a) Explain the current status of standardization of electric vehicles CO1 -U (16)
- Or
- (b) Explain the various international standards for electric vehicle. CO1 -U (16)

12. (a) Illustrate the test procedure using M-G set for electric dc motor used in electric vehicle CO2 -App (16)
- Or
- (b) Apply the procedure for the controller test in EV in every aspect. CO2 -App (16)
13. (a) Analyse the functional safety of autonomous vehicles. CO3 -Ana (16)
- Or
- (b) Analyze the functional safety life cycle for EVs. CO3 -Ana (16)
14. (a) What are all the EMC problems faced by motor drive in EV? Describe in detail. CO4 -Ana (16)
- Or
- (b) Discuss about EMC problems in wireless charging system in EV. CO4 -Ana (16)
15. (a) Explain the EMI mechanism in motor drive system. CO1 -U (16)
- Or
- (b) Illustrate the conducted emission test of motor drive system. CO1 -U (16)