

**School of Engineering****M.Tech Power System Engineering  
Semester End Examination - Jun 2024****Duration : 180 Minutes  
Max Marks : 100****Sem II - G2PI202T - Electric and Hybrid Vehicles**General Instructions*Answer to the specific question asked**Draw neat, labelled diagrams wherever necessary**Approved data hand books are allowed subject to verification by the Invigilator*

- |     |   |        |
|-----|---|--------|
| 1)  | What are the disadvantages of electric vehicles?  | K1(2)  |
| 2)  | List the factors on which speed of a d.c.motor depends?   | K2(4)  |
| 3)  | Define electromechanical batteries.   | K2(6)  |
| 4)  | How the electric motors used in EVs differs from that of used in industrial application?                      | K3(9)  |
| 5)  | Explain the various Hybrid drive train topologies?  | K3(9)  |
| 6)  | Discuss the transmission characteristics and draw a general lay out of a EV.                                  | K5(10) |
| 7)  | Explain the configuration of series hybrid electric drive train With a neat sketch,.                          | K4(12) |
| 8)  | Explain active cell balancing method. Why Balancing of cells is required in battery?                          | K5(15) |
| 9)  | Explain working of AC series motor with necessary Diagrams.   | K5(15) |
| 10) | Explain historical of automobile and development of interest and activity in the EV from 1890 to present day. | K6(18) |