R18 Regulation *Subject code:2E7BB*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech VII Semester Supplementary Examinations, November 2023

HYBRID ELECTRICAL VEHICLES

(EEE)

Maximum Marks: 70 Date:12.12.2023 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10x2M=20 Marks)

		Bloom Tx
1	Define Hybrid Electric Vehicles.	L1
2	What is Electric Vehicles?	L1
3	What is Series Parallel Configuration?	L1
4	Write about multi drive systems?	L1
5	Write about PMMC Motor?	L1
6	Write the Induction Motor principle?	L1
7	Define Energy Storages System.	L1
8	What is Battery?	L1
9	Define Fuzzy Logic.	L1
10	What are Power Electronics?	L1

Part-B

Answer All the following questions. (5X10M=50Marks)

11	Brief explain in details about components of internal combustion engines. [10]	L3
	OR	
12	a) Write about the internal combustion engine with neat diagram. [5] b) Draw the power flow diagram of conventional system. [5]	L2 L2
13	Explain Social and environmental importance of hybrid and electric vehicles. [10]	L3
	OR	
14	Explain about various hybrid drive-train topologies. [10]	L3
15	Discuss various electric drive train topologies. [10]	L3
	OR	
16	a) Explain Configuration and control of DC Motor drives. [5] b) Write a short note on control system used in drives. [5	L3 L1

17	What is Energy Storage and write different types of energy storage systems used in electrical vehicles? [10]	L2
	OR	
18	Brief explain about Requirements for Energy Storage in Hybrid and Electric Vehicles. [10]	L3
19	Brief explain the energy management system with different diagrams. [10]	L3
	OR	
20	Classification of different energy management strategies and explain them. [10]	L3