Course Code: **23EE6E03**

BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE

(AUTONOMOUS)

III-B.Tech II-Semester Regular Examinations (BR23), April/May -2026

FUNDAMENTALS OF ELECTRICAL VEHICLES(CIVIL)

Time: 3 hours Max. Marks: 70

Question Paper consists of Part-A and Part-B
*Answer **ALL** the question in **Part-AandPart-B***

PART–A (10X2 = 20M)

		Marks	CO	BL
1. a)	Write the advantages of electrical vehicles	(2M)	CO1	BL1
b)	List the components of conventional vehicles	(2M)	CO1	BL2
c)	Write the purpose of the traction motors	(2M)	CO2	BL2
d)	What is purpose of rectifiers used in evs	(2M)	CO2	BL2
e)	Compare different motors usedi in ev and hybrid vehicles	(2M)	CO3	BL1
f)	Write the applications of switeched reluctance motors	(2M)	CO3	BL2
g)	Write the merits and demerits of hev	(2M)	CO4	BL1
h)	Write the range of complex hev	(2M)	CO4	BL1
i)	Mention different kinds of batteries used in evs	(2M)	CO5	BL2
j)	What is working principle of fuel cell	(2M)	CO5	BL2

PART–B (5X10 = 50M)

2a.	Write a brief note on history of electrical vehicles	10(M)	CO1	BL2
	(OR)			
3a.	Mention different kinds of electrical vehicles and also write about ev market in and around world	10(M)	CO1	BL2

4a.	Write about bi directional dc-dc converters used in evs	10(M)	CO2	BL2
	(OR)			
5a.	Briefly explain about voltage source inverter and pwm inverters used in ev	10(M)	CO2	BL2

6a	Give the construction and working details of PMSM used in evs	10(M)	CO3	BL4
	(OR)			
7a	Give the construction and working details of brushless dc motors used in ev	10(M)	CO3	BL4

8a	Give the evolution of hybrid electrical vehicles and also write advantages and applications of HEV	10(M)	CO4	BL2

	(OR)			
9a.	Give a brief note on architecture of series and parallel HEV	10(M)	CO4	BL4

10a	Compare various kinds of batterieswith applications used in ev	10(M)	CO5	BL3

(OR)

10.B	Write a brief note on fuel cell and ultracapacitors	10M	CO5	BL3

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