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Model Question Paper 2022-23 (CBCS Scheme)
Sixth Semester B.E. Degree Examination (Mechanical Engineering)

MODERN MOBILITY

TIME: 03 Hours

Max. Marks: 100

- Note: 01. Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**.
 02. M: Marks, L: Blooms Level, C: Course outcomes

Module-1			M	L	C
Q.01	a	With a brief explanation, give the classification of an automobile with respect to usage.	10	L2	CO1
	b	Explain the main components of internal combustion engines with their functions.	10	L3	CO1
OR					
Q.02	a	Explain the cooling and lubrication system of an engine.	10	L2	CO1
	b	Explain the modern fuel system and engine management system.	10	L3	CO1
Module-2					
Q.03	a	Explain centrifugal clutch and fluid flywheel with neat sketches.	10	L2	CO1
	b	Differentiate between the radial and conventional tyres.	10	L3	CO2
OR					
Q.04	a	Explain synchronous gearbox and torque converter.	10	L2	CO1
	b	With a neat sketch, explain continuously variable transmission and infinitely variable transmission.	10	L3	CO2
Module-3					
Q.05	a	Explain the construction and working of rack & pinion and worm & wheel.	10	L2	CO1
	b	Explain steering geometry and wheel balancing.	10	L2	CO2
OR					
Q.06	a	Explain the mechanism and linkages of parking brakes and ABS.	10	L2	CO1
	b	With a layout explain the working of hydraulic and air suspension.	10	L2	CO2
Module - 4					
Q. 07	a	What are the exhaust gas pollutants and their effects on environment?	10	L2	CO3
	b	Explain the working of CNG vehicles with their advantages and disadvantages.	10	L2	CO3
OR					
Q.08	a	Explain the transmission and control system of electric hybrid vehicle.	10	L2	CO3
	b	What is hydrogen-fuel cell vehicle? Discuss its advantages and disadvantages.	10	L2	CO3
Module-5					
Q.09	a	Explain the layout of 2 and 4-Wheeler electric vehicles.	10	L2	CO4
	b	Explain any two types of motors used in electric vehicles.	10	L2	CO4
OR					
Q.10	a	Explain the construction and working principle of lithium and metal air batteries.	10	L2	CO4
	b	Explain the battery charging types and their requirements.	10	L2	CO4