U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

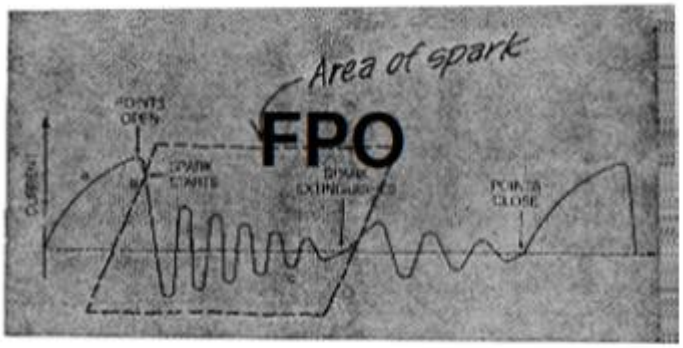
Autonomous Institute Affiliated to VTU

July 2023 Semester End Main Examinations

Programme: B.E. **Semester: VIII**
Branch: Institutional Elective **Duration: 3 hrs.**
Course Code: 19EC8OE3AE **Max Marks: 100**
Course: Automotive Electronics **Date: 06.07.2023**

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

			UNIT - I	CO	PO	Marks
1	a)		Identify the conventional automotive subsystem responsible stopping and slowing down the vehicle, and comment on any one type of system with its structural diagram.	*CO1*	*PO1*	**10**
	b)		Identify a device used for the generation of the following primary current waveform and with the help of its structural diagram comment on the mechanism involved in the pulse generation. 	*CO1*	*PO1*	**10**
			UNIT - II			
2	a)		Analyse the automotive subsystem responsible for starting the vehicle and also comment on the functional importance of each module used in a circuit.	*CO 2*	*PO 2*	**10**
	b)		Discuss the Principle and construction of Lead-acid Battery used in Automotive Systems.	-	-	**10**
			UNIT - III			
3	a)		What is an electronic control unit? With a neat diagram, explain electronic fuel control system.	-	-	**10**
	b)		Analyse the Effect of EGR on Engine Performance with necessary graphs.	*CO 2*	*PO 2*	**10**

			UNIT - IV			
	4	a)	Identify and explain an automotive sensor used to sensed crankshaft shaft position using optical techniques.	*CO 1*	*PO 1*	**10**
		b)	What is the Actuator? Explain working of a Ignition Actuator in detail.	-	-	**10**
			OR			
	5	a)	Examine the influence of fuel mixture and temperature on EGO Output Voltage and switching times respectively with relevant graphs.	*CO 1*	*PO 1*	**10**
		b)	What is Hall Effect? Explain a position sensor using the principle of Hall Effect.	-	-	**10**
			UNIT - V			
	6	a)	Identify and Elaborate suitable safety-related system that assists the driver in deceleration of the vehicle in poor or marginal braking conditions.	*CO 1*	*PO 1*	**10**
		b)	With the help of a block diagram explain how "Low tire pressure warning system" may be incorporated in an Automobile.	*CO 3*	*PO 6*	**10**
			OR			
	7	a)	Discuss Collision Avoidance Radar Warning System used in Automotive systems.	*CO 3*	*PO 6*	**10**
		b)	Explain the following Automotive Network Protocols CAN, LIN, MOST and Flex Ray	-	-	**10**

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