Name: Enrolment No:	

UPES
End Semester Examination, May 2024

Programme Name : B.Tech (Mechatronics Engg.) **Semester : VIII**
Course Name : Automotive Mechatronics **Time : 03 hrs**
Course Code : MECH 4037P **Max. Marks: 100**
Nos. of page(s) : 2

Instructions: All the sections are mandatory.

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	List the various types of engines commonly utilized in automotive systems.	**4**	**CO1**
Q 2	Recall the different components of Electronic Stability Program (ESP) system.	**4**	**CO1**
Q 3	Discuss the advantages of using a CAN (Controller Area Network) bus in automotive system.	**4**	**CO1**
Q 4	Explain the working of the catalytic converter	**4**	**CO1**
Q 5	Discuss the contents of a standard job card used in workshop for a maintenance and servicing.	**4**	**CO2**
	SECTION B **(4Qx10M= 40 Marks)**		
Q 6	Explain the following terminologies. a) Supplemental Restraint System (SRS) b) Media Oriented Systems Transport (MOST)	**10**	**CO2**
Q 7	Differentiate between Traction Control System (TCS) and Electronic Stability Program (ESP).	**10**	**CO3**
Q 8	Draw and analyze the wiring diagram of screen wipers.	**10**	**CO3**

	"OR" Evaluate the necessity of PDI (Pre-Delivery Inspection) in a service center.		
Q 9	Create a diagnosis flow chart for a Traction control system for fault diagnosis.	**10**	**CO4**
SECTION-C (2Qx20M=40 Marks)			
Q 10	Explain the components of the Electronic Stability Program (ESP) and evaluate its role in enhancing vehicle safety. Discuss the role of wheel speed sensors, steering angle sensors, and yaw-rate sensors. Compare and contrast scenarios with and without ESP, detailing how the system contributes to the prevention of accidents. *"OR"* As a customer visiting an automobile service center equipped with a Workshop Information System (WIS) critically evaluates the system's advantages and the associated procedures. Examine the influence of the WIS on your service experience, particularly during vehicle maintenance and repairs. Investigate the different features of the WIS and deliberate on its role in enhancing service efficiency and elevating customer satisfaction.	**20**	**CO4**
Q 11	Design a strategic educational plan to familiarize new drivers with the importance and usage of an advanced Vehicle Management System. Ensure that the plan includes methods to analyze the system's key features and their impact on driving safety and vehicle performance.	**20**	**CO5**