

Register No.

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SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore - 641 107



AN AUTONOMOUS INSTITUTION

Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

INTERNAL ASSESSMENT EXAMINATION – I

Seventh Semester

B.E-Mechanical and Mechatronics Engineering (Additive Manufacturing)

19MO701 ADVANCED MECHATRONICS

Regulations 2019

Duration: 1 Hours 30 Minutes

Date : 28.08.2024

Session : FN

Maximum: 50 Marks

Answer ALL questions

PART A - (5 X 2 = 10 marks)

Q.No	Question	M	CO	BL
1.	What is the primary purpose of driver assistance systems in vehicles?	2	CO-1	L -1
2.	How does a seat belt tightening system contribute to passenger safety	2	CO-1	L -2
3.	Summarize the function of a child lock in a vehicle's infotronics system	2	CO-1	L -1
4.	What is meant by "X-by-wire" systems in automotive technology?	2	CO-2	L -1
5.	Define the primary function of an electronic ignition system in a vehicle.	2	CO-2	L -1

PART B - (2 X 13 = 26 marks)

6. (a) Sketch the primary components of a driver assistance system 13 CO-1 L-3

OR

(b) Demonstrate the concept of adaptive cruise control in driver assistance systems. 13 CO-1 L-3

7. (a) Show the key components and functioning of an electronic ignition system in an internal combustion engine. 13 CO-2 L-3

OR

- (b) Compare the environmental benefits of using a fuel cell in electric vehicles to traditional internal combustion engines. Discuss any challenges associated with fuel cell adoption. 13 CO-2 L-3

PART C –(1 x 14 = 14 Marks)

8. (a) Relate adaptive noise control and collision avoidance systems in driver assistance systems. 14 CO-1 L-3

OR

- (b) Prepare the concept of "X-by-wire" systems in modern vehicles. Provide examples of X-by-wire systems and their advantages. 14 CO-2 L-3

Faculty In charge

HoD/Mech

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PART A - (5 X 2 = 10 marks)

Q.No	Question	M	CO	BL
1.	List the example of a driver information system found in modern vehicles.	2	CO-1	L -1
2.	What is the function of a collision avoidance system in a vehicle?	2	CO-1	L -1
3.	Identify the adaptive noise control contribute to a quieter and more comfortable driving experience.	2	CO-1	L -1
4.	Summarize the primary function of an electronic ignition system in a vehicle.	2	CO-2	L -2
5.	Compare between a CNG (Compressed Natural Gas) vehicle and a traditional gasoline vehicle.	2	CO-2	L -2

PART B - (2 X 13 = 26 marks)

6. (a) Manipulate designing a driver assistance system. Describe how you would implement a collision warning system. 13 CO-1 L-3

OR

- (b) Construct the concept of adaptive cruise control in driver assistance systems. 13 CO-1 L-3

7. (a) Relate a CNG (Compressed Natural Gas) vehicle and an electric vehicle (EV) in terms of their propulsion systems, environmental impact, and energy sources. 13 CO-2 L-3

OR

- (b) Complete the environmental benefits of using a fuel cell in electric vehicles to traditional internal combustion engines. 13 CO-2 L-3

PART C –(1 x 14 = 14 Marks)

8. (a) Design an innovative driver information system that enhances the overall driving experience. Explain its key features and benefits. 14 CO-1 L-5

OR

- (b) Categorize the principle behind electric hybrid vehicles and how they combine internal combustion engines and electric motors for improved efficiency. 14 CO-2 L-4

Faculty In charge

HoD/Mech