Total No. of Questions : 8]

SEAT No. :

P3943

[Total No. of Pages : 2

[5462] - 666

M.E. (E & TC - VLSI & Embedded Systems)

EMBEDDED AUTOMOTIVE SYSTEMS

(2017 Course) (504209) (Semester - II)

Time : 3 Hours] *[Max. Marks :50*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Assume suitable data, if necessary.***
3) ***Solve any five questions.***

Q1) a) Draw & explain general electric vehicle layout. **[6]**

b) Write a note on Evolution of electric braking system. **[4]**

Q2) a) Describe with the aid of sketches the different ways in which a hybrid vehicle can be laid out. **[6]**

b) Define: 'Total vehicle dynamics'. List eight chassis systems that can be controlled by electronics. **[4]**

Q3) a) What is an EGO sensor? What are the desirable EGO characteristics? Explain its switching characteristics. **[6]**

b) Explain with the aid of a labeled sketch the operation of a wheel speed sensor. **[4]**

Q4) a) List out the different actuators used in electronic engine management. What approach will you choose to detect crank shaft position for fuel ignition. **[6]**

b) Explain working principle of throttle valve used for speed control. **[4]**

P.T.O.

Q5) a) Draw & explain electronic fuel control and electronic ignition system configuration. **[6]**

b) Explain the components of active steering system. **[4]**

Q6) a) Explain the effect of Exhaust gas recirculation and effect of spark timing on performance of engine. **[6]**

b) Describe the operation of an active suspension system. **[4]**

Q7) a) State need of protocol. Explain applications of FlexRay, LIN, KWP2000 & J1939 in automotive domain. **[6]**

b) With respect to CAN explain error handling and protocol extension. **[4]**

Q8) a) Draw & explain architecture of AUTOSAR. Also state AUTOSAR libraries. **[6]**

b) Compare LIN & CAN with respect to automotive applications. **[4]**

♦ ♦ ♦

CEGP013091 49.248.216.238 21/12/2018 13:36:25 static-238