Total No. of Questions : 8]

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

EMBEDDED AUTOMOTIVE SYSTEMS

(2017 Pattern) (CBCS) (Semester - II) (504209)

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

Instructions to the candidates:

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

Q1) a) List basic systems that make up an automobile and explain their major components and functions. **[5]**

b) Discuss the future trends in automotive embedded system. **[5]**

Q2) a) Describe: "Why electronics is so widely used in today's vehicles?" **[5]**

b) Briefly explain the working of spark plug & disk braking system with suitable diagram. **[5]**

Q3) a) What is Lambda sensor? Explain the construction and working of Lambda sensor. **[5]**

b) Outline the construction of flap type & Hot wire type air flow sensor with suitable example. **[5]**

Q4) a) With suitable block diagram explain automatic cruise control system. List sensors used in such system. **[5]**

b) With neat diagram explain working of Load Cell. **[5]**

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Q5) a) What is EGO sensor? What are desirable EGO characteristics? Explain its switching characteristics. **[5]**

b) Explain electronics steering control system and automatic rain operated wiper control. **[5]**

Q6) a) What is the role of control system strategies in fine tuning of automotive systems? **[5]**

b) Outline & Explain components of an electronically controlled engine with suitable diagram. **[5]**

Q7) a) Enlist various types of automotive buses. Compare any three types of automotive buses. **[5]**

b) Explain black-box fault finding with suitable diagram. **[5]**

Q8) a) List the six-stage diagnostic process. Explain the same with suitable example. **[5]**

b) Explain electrical diagnosis procedure in detail. **[5]**

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