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10EC117

M.Tech. Degree Examination, December 2011
Automotive Electronics

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions.***

1 a. Explain the four stroke cycle, with neat diagrams. **(10 Marks)**
b. Briefly explain the working of a spark plug with a neat diagram. **(05 Marks)**
c. With a neat diagram, explain the disk braking system of an automobile. **(05 Marks)**

2 a. Briefly explain the air flow sensor, with neat circuit diagrams. **(10 Marks)**
b. Explain the working of a magnetic reluctance position sensor, with a neat diagram. **(10 Marks)**

3 a. Explain how coolant temperature can be measured using the thermistor. **(08 Marks)**
b. Write a note on optical crankshaft position sensor. **(08 Marks)**
c. Briefly explain Hall effect. **(04 Marks)**

4 a. Briefly explain the electronic fuel control system, with a block diagram. **(10 Marks)**
b. Briefly explain the secondary air control system. **(10 Marks)**

5 a. Briefly explain the concept of cruise control. **(10 Marks)**
b. Explain why antilock braking system (ABS) is needed. Explain the physical configuration of ABS. **(10 Marks)**

6 a. Briefly explain how multiplexing can be used in automobile instrumentation. **(12 Marks)**
b. Explain how oil pressure can be measured using microcontroller based electronics. **(08 Marks)**

7 a. Write short notes on time light with relevant diagrams. **(08 Marks)**
b. Write short notes on trip information computer. **(08 Marks)**
c. Briefly explain the construction of LCD. **(04 Marks)**

8 a. Briefly explain how expert system can be used in automobile electronics. **(10 Marks)**
b. Briefly explain anticollision warning systems. **(10 Marks)**

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