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10EC117

**M.Tech. Degree Examination, January 2011**

**Automotive Electronics**

Time: 3 hrs.

Max. Marks:100

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

- 1 a. Briefly explain the four stroke cycle of an IC engine. (10 Marks)  
b. Briefly explain the working of conventional ignition system in a SI engine. (10 Marks)
- 2 a. Briefly explain the following: (10 Marks)  
i) Standards ii) Precision iii) Calibration iv) Accuracy v) Reliability  
b. Write a short note on the proportional – integral controllers. (10 Marks)
- 3 a. Briefly explain the motivation behind electronic engine control. (06 Marks)  
b. Briefly explain the effect of spark timing on engine performance. (10 Marks)  
c. Write a short note on engine mapping. (04 Marks)
- 4 a. Write a short note on electronic ignition. (06 Marks)  
b. Explain the functions of a typical engine control system. (14 Marks)
- 5 a. Briefly explain mass air flow sensor. (10 Marks)  
b. Briefly explain Hall effect position sensor. (10 Marks)
- 6 a. Write a short note on idle air control. (10 Marks)  
b. Briefly explain the control operations in an engine during : (10 Marks)  
i) Hard acceleration ii) Engine start.
- 7 a. Briefly explain cruise control. (10 Marks)  
b. Write a short note on antilock braking system. (10 Marks)
- 8 a. Write a short note on trip information computer. (08 Marks)  
b. Write short note on air bag deployment system. (08 Marks)  
c. Briefly explain the need for continuously variable transmission (CVT). (04 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

