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Sixth Semester B.E. Degree Examination, December 2011
Mechatronics & Microprocessor

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting
at least TWO questions from each part.**

PART – A

- 1 a. Define Mechatronics. Briefly explain various evolution stages of Mechatronics. (10 Marks)
- b. Explain with a block diagram the working of a microprocessor controlled washing machine. (10 Marks)
- 2 a. Define transducer. Explain primary and secondary transducers with examples. (10 Marks)
- b. What is Hall effect? Explain the principle of Hall effect with a neat sketch. (10 Marks)
- 3 a. Name any four important solid state switches and explain each in brief. (10 Marks)
- b. Explain non-permanent magnet type DC motors with schematic diagrams. (10 Marks)
- 4 a. Explain inverting and non-inverting op-amps with a neat sketch. (10 Marks)
- b. How are filters classified? Explain low pass and high pass filters. (10 Marks)

PART – B

- 5 a. Explain the evolution of microprocessor and explain with a block diagram the organization of microprocessor. (10 Marks)
- b. What are logic gates? Explain AND, OR and NOT gates with symbols and truth tables. (10 Marks)
- 6 a. Explain 8085 A microprocessor architecture with a block diagram. (10 Marks)
- b. Explain the following technology related to microprocessor:
i) RAM ii) ALU iii) Address Bus iv) Interrupts v) Microcontroller. (10 Marks)
- 7 a. What are the types of registers used in 8085 microprocessor? Explain with a block diagram. (10 Marks)
- b. Explain pin configuration of 8085 microprocessor with a schematic diagram. (10 Marks)
- 8 a. Explain the instructions and data flow with reference to a microprocessor. (10 Marks)
- b. Explain the system clock and memory access. (10 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.

