

**G 1219**

(Pages : 2)

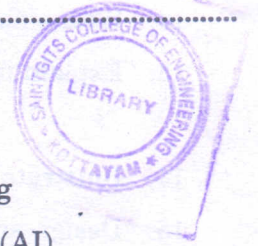
Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, MAY 2015**

**Sixth Semester**

Branch : Applied Electronics and Instrumentation Engineering  
AI 010 604 - MICROCONTROLLER BASED SYSTEM DESIGN (AI)  
(New Scheme—2010 Admission onwards)  
[Regular/Improvement/Supplementary]



Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.  
Each question carries 3 marks.*

1. List down the difference between PLA and PAL.
2. Mention the advantages of 89C2051  $\mu$ Cover 8051  $\mu$ C.
3. Draw the functional diagram of sample and hold circuit.
4. Write short notes on 2 wire serial EPROM.
5. Define Duty cycle and % duty cycle.

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.  
Each question carries 5 marks.*

6. Design a 4:1 MUX using PLA.
7. Explain the memory models of 89C2051  $\mu$ C.
8. What is meant by opto-isolator ? Explain the functioning of opto-isolator.
9. Discuss the various serial communication standards.
10. Define :
  - (a) Watch dog Timer ;
  - (b) Baud Rate.

(5 × 5 = 25 marks)

**Part C**

*Answer all questions.  
Each question carries 12 marks.*

11. Design and implement the binary to grey code converter using PLA.

Or

**Turn over**

12. With a neat sketch, explain the different types of FPGA.
13. Explain in detail about the memory organization of 89C2051.

Or

14. Illustrate the block diagram of 89C2051  $\mu$ C and discuss its functioning.
15. Design and implement the temperature control system using microcontroller.

Or

16. Draw and explain the functioning of successive approximation ADC.
17. Describe the working of I<sup>2</sup>C serial communication bus standards.

Or

18. Compare the following bus RS232, RS422, RS485 bus standards.
19. With neat diagram explain the interfacing of stepper motor with 8051  $\mu$ C.

Or

20. Explain how the LED is interfaced with 8051  $\mu$ C. Write an ALP program for displaying "HAI" twice.

(5 × 12 = 60 marks)

