

G 381

(Pages : 2)

Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2014

Sixth Semester

Branch : Applied Electronics and Instrumentation Engineering

AI 010 604—MICROCONTROLLER BASED SYSTEM DESIGN (AI)

(New Scheme—2010 Admission onwards)

[Regular/Improvement/Supplementary]

Maximum : 100 Marks

Time : Three Hours

Part A

Answer all questions.

Each question carries 3 marks.

1. Show the PAL numbering in the "PAL16L8" representation.
2. List the different memory models in embedded C.
3. What is sampling ? State sampling theorem.
4. Compare RS232, RS422 and RS485.

(6 × 3 = 18 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Implement a 4-bit BCD to Gray Code converter using PLA.
7. Compare the features of 89C51 and 89C2051.
8. With a neat block diagram, explain the principle of a dual slope ADC.
9. What are the common transfer modes for USB ? Explain.
10. With a neat block diagram, explain the functioning of DS1302.

(5 × 5 = 25 marks)

Part C

Answer all questions.

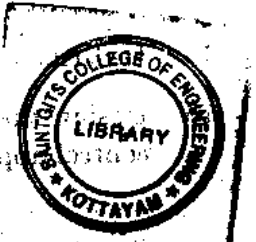
Each question carries 12 marks.

11. Explain the important specifications of TTL, ECL and CMOS logic families with suitable examples.

Or

12. Explain the architecture and important features of GAL 22V10.

Turn over



13. With neat block diagram, describe the architecture of an ARM processor.

Or

14. Describe a general purpose PIC microcontroller architecture. What are its applications ?

15. Design the circuit diagram of an optically isolated TRIAC interface for a typical temperature control application and write a program for the same using 8051.

Or

16. With an apt circuit diagram, explain the interfacing of an ADC 0804 with 8051.

17. Explain the functioning of 2-wire serial EEROM 24C04.

Or

18. Write, using suitable program example, how 8051 can be used in full duplex mode.

19. Write a C program to display "HELLO" in an alphanumeric LCD. Draw the schematic diagram of your system.

Or

20. Write an assembly language program for a 4-way traffic light control system and explain the output of your code in a schematic diagram.

(5 × 12 = 60 marks)

