G 1435　　　　　　　　(Pages : 2)　　　　Reg. No...............................

Name.................................

B.TECH. DEGREE EXAMINATION, MAY 2016

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. Briefly explain the types of SPLDs.

2. Mention the features of 89C51 Microcontroller.

3. List and specify the specifications of ADC.

4. Describe 3-wire serial EEPROM.

5. Mention the features of a DS1302 real time clock.
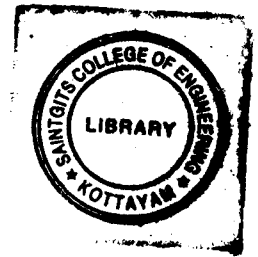
(5 × 3 = 15 marks)

Part B

Answer all questions.
Each question carries 5 marks.

6. What are the advantages of a FPGA based system design ?

7. Briefly explain memory organization in ARM processor.

8. Explain the working of successive approximation type ADC.

9. Compare RS 232, RS 422 and RS 482.

10. Briefly explain the LCD display with a neat sketch.

(5 × 5 = 25 marks)

Part C

Answer all questions.
Each full question carries 12 marks.

11. What is GAL ? Explain 22 VID GAL with a neat sketch.

Or

12. Explain PAL operation with a neat sketch. Implement the function $X = A\bar{B}C + \bar{A}B\bar{C} + \bar{A}\bar{B} + AC$.

Turn over

13. Explain with a neat sketch the structure of ARM processor.

Or

14. With a neat block diagram, explain 89C2051. Mention its difference with 89C51.

15. Explain optically isolated TRIAC interface to 89C51 with a neat sketch. Write a C program for the same.

Or

16. Explain different types of DAC.

17. Explain 2-wire serial EEPROM interface with microcontroller with the help of necessary diagrams.

Or

18. Explain the PCI bus interface with microcontroller. Write an assembly language program for the same.

19. Explain the interfacing of DIP switch with microcontroller.

Or

20. Explain how L293 motor driver is used with the microcontroller, with a neat circuit.

(5 × 12 = 60 marks)