

B.TECH. DEGREE EXAMINATION, NOVEMBER 2014**Seventh Semester**

Branch : Electronics and Communication Engineering/
Applied Electronics and Instrumentations

MICROCONTROLLER BASED SYSTEM DESIGN (L, A)

(Old Scheme—Prior to 2010 Admissions)

[Supplementary/Mercy Chance]

Time : Three Hours

Maximum : 100 Marks

Part A

*Answer all questions.
Each question carries 4 marks.*

1. Discuss briefly on the various logic families.
2. Write a note on FPGA.
3. Compare the features of 89C 2051 microcontroller with 89C51 Microcontroller.
4. Show how a DIP switch can be interfaced to μC .
5. Compare the performance of single slope and dual slope ADCs.
6. Discuss the various types of D/A converters.
7. What is an SPI bus ? Compare with R^2C bus.
8. Discuss the working of a low voltage differential signaling.
9. Explain Keyboard response codes with examples.
10. Draw the Interfacing diagram of a stepper motor with a microcontroller.

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. (a) Compare the features of various Logic families. (7 marks)
 - (b) Explain a dual part RAM. (5 marks)
- Or*
12. Explain the realisation of PAL arrays with Flip-Flops. (12 marks)
 13. Design a simple trainer circuit using 89C51 μC . (12 marks)
- Or*
14. Design a traffic control system using 89C51 μC . (12 marks)

Turn over



15. Discuss with necessary diagram and program the interfacing of an ADC with a microcontroller. (12 marks)

Or

16. Discuss the design of a temperature control system using 89C51 microcontroller. (12 marks)
17. Describe with timing diagrams the operation of I²C and SPI bus. (12 marks)
18. (a) What are the serial communication standards? (5 marks)
- (b) Draw the interfacing of a 3 wire series EEPROM. (7 marks)

Or

19. (a) Discuss the principle DS1232 watch dog timer. (5 marks)
- (b) Show low frequency can be measured with a microcontroller. (7 marks)

Or

20. Design a position control system using 89C51 Microcontroller. Write the program in assembly language. (12 marks)

