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Question Paper Code : 31214

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2012.

Fifth Semester

Electronics and Communication Engineering

EC 1301 — MICROPROCESSOR AND MICROCONTROLLER

(Common to Sixth Semester – Electrical and Electronics Engineering, Electronics and Instrumentation Engineering and Instrumentation and Control Engineering)

(Regulation 2008)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   What is T state? How many T states are required for a CALL function?

2.   What is the function of XCHG instruction?

3.   Write a note on GPIB.

4.   Calculate the count for the timer to obtain the square wave of the 200 microseconds period if the clock frequency is 3MHz.

5.   Give the description for the instruction AAA in 8086.

6.   List the active segments of 8086 memory.

7.   List the special function registers of 8051.

8.   What is timer/flag interrupt?

9.   Show how the CPU would subtract 05H from 43H in 8051 microcontroller. Write its consequences.

10. What is the function of register select (RS) in the LCD interfacing?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the five functional groups of instruction sets of 8085 with atleast five examples for each instruction set. (16)

Or

(b) (i) Draw the timing diagram for the instruction MOV A,B. (8)

(ii) Draw and explain the timing diagram of IN and OUT instruction.(8)

12. (a) With neat block diagram, explain the function of 8279 programmable keyboard/display interface. (16)

Or

(b) Draw the block diagram of 8255 programmable peripheral interface and explain the different modes of operation with their control word format. (16)

13. (a) (i) Explain the different instruction formats for 8086 CALL and RET instructions. (8)

(ii) Describe the assembler directives: Define byte (DB), Define doubleword (DD), Define Quadword (DQ) and Define ten bytes (DT). (8)

Or

(b) Draw the internal architecture of Intel 8086 microprocessor and explain. (16)

14. (a) Explain the Timer/counter architecture of 8051 with examples. (16)

Or

(b) Explain in detail all the special function registers of 8051. (16)

15. (a) Explain the different types of instruction set available in 8051 microcontroller with an example. (16)

Or

(b) (i) Explain the interfacing of 8051 with sensors. (8)

(ii) Write an ALP program in 8051 to convert 11111101(FD) to decimal and display the digits on P0, P1 and P2. (8)

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