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Question Paper Code : 11334

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

Fifth Semester

Electronics and Communication Engineering

EC 2304/EC 54 – MICROPROCESSORS AND MICROCONTROLLERS

(Regulation 2008)

(Common to PTEC 2304 – Microprocessors and Microcontrollers for B.E. (Part-Time) Fifth Semester Electronics and Communication Engineering – Regulation 2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. How clock signal is generated in 8086 microprocessor?
2. State the function of queue status lines QS_0 and QS_1 in 8086 microprocessor.
3. How will carry and zero flags reflect the result of the instruction CMP BX, CX?
4. Give any four miscellaneous instructions in 16 bit microprocessor.
5. List the four Display modes of 8279 keyboard/Display controller.
6. What are the enhanced features of 8254 Programmable timer compared to 8253?
7. Specify the size of memory systems used in 8051 microcontroller.
8. Mention the different operand types used in 8051 microcontroller.
9. State the use of I^2C bus standard.
10. What is the use of PWM in motor control using microcontroller?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the architecture of 8086 microprocessor. (8)

(ii) Discuss about the different data transfer schemes with examples. (8)

Or

(b) Describe the maximum mode signals, bus cycle and maximum mode system configuration of 8086 microprocessor in detail. (16)

12. (a) (i) Discuss about the 8086 instructions used for transferring data between registers, memory, stack and I/O devices. (8)

(ii) Write a Program based on 8086 instruction set to multiply a constant value to a sequence of data from 1 to n stored in memory. (8)

Or

(b) (i) Write a Program based on 8086 instruction set to compute the average of 'n' number of bytes stored in the memory. (8)

(ii) Discuss about the use of various assembler directives in 8086 microprocessor programming. (8)

13. (a) Explain the programming and operating modes of 8255 PPI in detail. (16)

Or

(b) (i) With diagram, explain the operation of R-2R method of D/A converter. (8)

(ii) Explain the function of CRT terminal interface. (8)

14. (a) (i) Explain the parallel port architecture of 8051 microcontroller. (8)

(ii) Explain the operation of Serial port with associated registers. (8)

Or

(b) (i) With example, Explain the arithmetic and branching instructions of 8051 microcontroller. (8)

(ii) Write a Program based on 8051 instruction set to pack array of unpacked BCD digits. (8)

15. (a) With neat sketch, explain the microprocessor based Traffic Light control System. (16)

Or

(b) Describe in detail the microcontroller based system design with an example. (16)