Reg. No. : | | | | | | | | | | | |

Question Paper Code : Q 2205

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2009.

Sixth Semester

Electrical and Electronics Engineering

EC 1362 — MICROPROCESSOR AND MICROCONTROLLER

(Common to B.E. (Part–Time) Fifth Semester Regulation 2005)

(Regulation 2004)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Write an 8085 assembly language program to subtract two 8-bit decimal numbers.

2. What are the functions of the READY and ALE signals of 8085?

3. What are the use of CALL and RET instructions of 8085?

4. What are the addressing modes supported in 8085?

5. 8253's OUT signal is to be used as a clock input of the desired frequency to a particular device. Is it possible? How?

6. Discuss the BSR mode of operation of 8255.

7. What are the addressing modes supported by 8051?

8. Write an 8051 program to divide two 8-bit numbers.

9. What are the interrupts of 8051?

10. What are the uses of LCALL and LJUMP instructions of 8051?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Discuss the architecture of the 8085 processor with a neat diagram. (10)

(ii) Write an 8085 program to count the number of even and odd numbers in a given set of numbers. (6)

Or

(b) (i) Discuss the interrupts of 8085. (10)

(ii) Write an 8085 program to find the largest of a set of n 8-bit numbers. (6)

12. (a) (i) Discuss the organisation of the 8085 stack and the various instructions that will operate on the stack. (10)

(ii) Distinguish between memory mapped IO and IO mapped IO. (6)

Or

(b) (i) Write an 8085 ALP to generate a multiplication table and access it using a look up. (10)

(ii) Distinguish between an instruction cycle, a machine cycle and a clock cycle with an example instruction. (6)

13. (a) With a neat diagram, discuss the functional organization of a programmable interrupt controller.

Or

(b) Explain the operation of the keyboard /display controller with a neat diagram.

14. (a) Discuss in detail, the hardware and software support provided by 8051 for serial communication.

Or

(b) Discuss in detail the onchip timers supported by 8051, bringing out the various modes of operation of these timers.

15. (a) Discuss the architecture of the 8051 microcontroller with a neat diagram.

Or

(b) Show how the 8051 can be used to control the operation of an elevator system. Assume the elevator is to operate between three floors. Show the hardware interface and the required 8051 program.

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