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D 8482 (Pages 2) Name.....

Reg. No.....

FIFTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, DECEMBER 2010

EC 04 506—MICROPROCESSORS AND MICROCONTROLLERS

Time : Three Hours Maximum : 100 Marks

Answer **all** *questions.*

Part A

I. (a) Mention advantages of memory segmentation.

(b) What are assembler directives ? Give suitable examples.

(c) Distinguish between static RAM and dynamic RAM.

(d) Draw the minimum mode configuration of 8086 processor.

(e) List out various modes of operation of 8255 programmable peripheral Interface.

(f) What is meant by cycle stealing in a DMA ?

(g) Mention purpose of overflow flag is 8051 microcontroller.

(h) Write an 8051 Assembly language program to transmit a letter "G" serially at 9600 baud rate continuously.

(8 × 5 = 40 marks)

Part B

UNIT I

II. (a) (i) Distinguish between 8086 and 8086 processors. (5 marks)

(ii) Write an 8086 ALP to evaluate the series 1 + 2 + ... N where N is a 16 bit number.

(10 marks)

Or

(b) Discuss the steps involved in developing and executing a assembly language program.

UNIT II

III. (a) (i) Compare memory mapped I/O with I/O mapped I/O. (5 marks)

(ii) Interface 16K bytes of EPROM and 4K bytes of RAM using two 8K byte EPROM's (2764) and two 2K bytes RAM (6116). Draw the interface diagram and memory map.

(10 marks)

Or

(b) Explain architecture of Intel 8086 microprocessor with a neat block diagram.

Turn over

UNIT III

IV. (a) Explain working of Intel 8259 programmable Interrupt controller with a neat block diagram.

Or

(b) Interface a stepper motor to a 8086 microprocessor. Write an 8086 ALP to control stepper motor to rotate 360° is clockwise direction. Step angle is 1.8° per excitation.

UNIT IV

V. (a) (i) Explain Input/Output ports of 8051 Microcontroller. (9 marks)

(ii) Mention steps involved to generate a specified baud rate for serial communication. (6 marks)

Or

(b) (i) Explain interrupt structure of 8051 microcontroller. (10 marks)

(ii) Draw the bit pattern of program status word of 8051 microcontroller and explain significance of each bit. (5 marks)

[4 × 15 = 60 marks]