D 23430-A (Pages : 2) Name.....

Reg. No.....

FIFTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, DECEMBER 2011

EC 04 506—MICROPROCESSOR AND MICROCONTROLLERS

Time : Three Hours Maximum : 100 Marks

Answer **all** *questions.*

Part A

I. (a) What is purpose of a linker and debugger ?

(b) List out string instructions is 8086 microprocessor.

(c) Draw and specify purpose of 74LSI38 and its function table.

(d) Distinguish between Static RAM and Dynamic RAM.

(e) Explain any *one* application for hardshake I/O mode in Intel 8255 programmable peripheral interface.

(f) Write short notes on Burst DMA transfer.

(g) Draw the format of SCON register in Intel 8051 microcontroller and explain its purpose.

(h) Distinguish between a Microprocessor and a Microcontroller.

(8 × 5 = 40 marks)

Part B

Module I

II. (a) (i) Explain addressing modes of 8086 microprocessor. (9 marks)

(ii) How will you generate 20 bit physical address in an 8086 microprocessor ? Justify with an example.

(6 marks)

Or

(b) (i) Write an 8086 Assembly Language Program to count the number of positive and negative numbers is an given array of signed numbers.

(9 marks)

(ii) List out advantages of memory segmentation. (6 marks)

Module II

III. (a) Design an 8086 based system with the following specifications :—

(i) 8088 in Maximum mode.

(ii) 64 K bytes EPROM.

(iii) 64 K bytes RAM.

Draw complete schematic of the design indicating the address map.

Or

Turn over

(b) (i) Sketch block diagram showing 8086 minimum mode system. Explain the functions of 8282 lathces and 8286 transceiver.

(8 marks)

(ii) Indicate signals which are different when 8086 is used in minimum mode and maximum mode.

(7 marks)

Module III

IV. (a) Explain working of Intel 8279 keyboard/display interface with a neat block diagram.

Or

(b) Discuss the working of Intel 8253 programmable timer with a neat block diagram.

Module IV

V. (a) Discuss architecture of Intel 8051 microcontroller with a neat block diagram.

Or

(b) (i) Write an 8051 Assembly Language Program to sort an array of number is ascending order.

(9 marks)

(ii) Discuss interrupt structure of 8051 microcontroller. (6 marks)

[4 × 15 = 60 marks]