C 48097 (Pages 2) Name.....

Reg. No.....

FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, JUNE 2008

EC/AI 2K 405—MICROPROCESSORS AND MICROCONTROLLERS

Time : Three Hours Maximum : 100 Marks

Answer **all** *questions.*

I. (a) List the sequence of operation carried out by 8086 microprocessor in response to a hardware or software interrupt.

(b) Explain the use of the following 8086 instructions :—

(i) LOOP. (ii) REP prefix.

(iii) AAA. (iv) TEST.

(v) INTO (interrupt on overflow).

(c) With the help of circuit diagram, explain how the chip enables signal is generated for odd and even bank in 8086 based system.

(d) The external clock signal connected to 8279 keyboard display controller IC at its external pin is 3.1 MHZ. Find out the internal clock signal frequency after Reset.

(e) Discuss about real mode of operation.

(f) List the floating exceptions of Pentium.

(g) Discuss about data types supported by 80196 microcontroller.

(h) What are Hwindows ? Explain.

(8 × 5 = 40 marks)

II. (a) Explain the following with reference to 8086 CPU :—

(i) Interrupt vector table.

(ii) Segmented memory.

(iii) String addressing mode.

(3 × 5 = 15 marks)

Or

(b) List and explain the control signals generated by 8086 in its minimum mode.

III. (a) Explain how a 8 × 8 matrix keyboard can be interfaced to 8086 using 8279 keyboard display controller IC.

Or

(b) Discuss in detail about different modes of operation of 8255 PPI chip.

Turn over

IV. (a) Explain about branch prediction logic and the special registers of Pentium.

Or

(b) Discuss about the register organisation of 80386 microprocessor.

V. (a) Draw and explain the internal architecture of RALU of 80196 microcontroller.

Or

(b) Discuss about the addressing modes and data types supported by 80196 microcontroller.

(4 × 15 = 60 mar