Total No. of Questions : 5]   [Total No. of Printed Pages : 3

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EX-502(N)

B. E. (Fifth Semester) EXAMINATION, Dec, 2010

(New Scheme) (Electrical & Electronics Engg. Branch)

MICROPROCESSORS AND MICROCONTROLLERS

[EX-5Q2(N)J *Time : Tliree Hours Maximum Marks*

: 100 Minimum Pass Marks : 35 Note : Attempt all

questions.

1. (a) Draw and discuss the read and write cycle timing diagrams of 8086 in minimum mode. 10 (b) Give the comparison of the salient features of 8086, 80286 and 80386. 10

Or

   (a)   Discuss the following signals available in 80286 : 10

(i)   PEREQ

(ii)   PEACK

(iii) CODE/INTA

(iv) CAP

(v)   BUSY

  (b)   Draw and discuss the register set of 80386 and explain a typical function of each register in brief. 10

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2. (a) What do you mean by addressing modes ? What are the different addressing modes supported by 8086 ? • Explain each of them with suitable examples. 10 (b) Explain the stack structure of 8086 in detail. What is the role of stack in calling a subroutine and returning from the routine ? 10

Or

(a) What are the assembler directives of 8086 microprocessor ? Explain. 10

(b) Bring out the difference between :   5 each

   (i) Jump and loop instruction

   (ii) Shift and rotate instruction

3. (a) Interface 8255 with 8086 so as to have port A address 00, port B address 02, port C address 01 and CWR address 03. 10

(b) Interface a typical 12-bit DAC with 8255 and write a program to generate a triangular waveform of period 10 msec. The CPU runs at 5 MHz clock frequency. 10

Or

(a) What is the advantage of DMA controlled data transfer over interrupt driven or program controlled data transfer ? Why are DMA controlled data transfers faster ? 10

(b) Explain the mode instruction control word format 8251. 10

4. (a) How does 8051 differentiate between the external and internal program memory ? 10 (b) Discuss the following signal description of 8051 : 10 (i) ALE/PROG

(ii) EA/Vpp

(iii) PSEN

(iv) RXD

(v) TXD

(vi) RD

(vii) WR

Or

(a) What are the addressing modes supported by 8051 ? Explain with the help of examples. 10

(b) Write a program to generate square wave of time period 2 msec, in 8051 microcontroller. 10

5. (a) Explain stepper motor interfacing with 8051 microcontroller. 10 (b) Discuss RS-232 in detail. 10

Or

Write short notes on the following : 5 each

(a) Serial communication modes

(b) 8051 based thyristor firing circuit