



RM-7091

B. E. - III (Sem. VI) (EC/ECC) Examination

May / June - 2010

Microprocessor System & Application

Time : 3 Hours]

[Total Marks : 100

Instructions :

(1)

नीचे दृष्टावेक निशानीवाणी विगतो उत्तरवडी पर अवश्य लपवी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="text" value="B. E. - 3 (Sem. 6) (EC/ECC)"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="Microprocessor System & Application"/>	<input type="text"/>
Subject Code No. : <input type="text" value="7"/> <input type="text" value="0"/> <input type="text" value="9"/> <input type="text" value="1"/>	<input type="text"/>
Section No. (1, 2,.....): <input type="text" value="1&2"/>	<input type="text"/>
	Student's Signature

- (2) Figures to the right indicate full marks.
(3) Make suitable assumptions whenever required.

SECTION - I

- 1 (a) Attempt following :
- (i) Explain the following signals of 8086 microprocessor. 4
- (a) DT/\bar{R}
- (b) \overline{BHE}
- (ii) Find missing term related to 8086 addresses. 3
- (a) $4370 : 56IE = ?$
- (b) $7A32 : ? = 7A348H$
- (iii) State difference between microprocessor and microcontroller. 3
- (b) Interface ADC 0808 with 8086 using 8255 ports. 10
Use port A of 8255 for transferring digital data output of ADC to the CPU and port C for control signals. Assume that an analog input is present at i/P_2 of the ADC and a clock input of suitable frequency is available for ADC. Draw the schematic and write required ALP.

- 2 (a) Interface two $4K \times 8$ EPROMS and two $4k \times 8$ RAM chips with 8086. Select Suitable Maps. 8
- (b) Draw a schematic hardware circuit for interfacing five, 7-segment displays with 8086 using output ports. Display numbers 1 to 5 on them continuously. The 7-segment codes are stored in a look-up table serially at the address 2000 : 0000H onwards starting from code for 1. 8

OR

- (b) Explain the function of following special function register regarding 8051 : 8
- (i) IP
- (ii) DPTR
- (iii) PSW
- (iv) SCON
- 3 Any two : 14
- (a) Draw block diagram of minimum mode 8086 system and discuss function of all available control signals in minimum mode.
- (b) Explain daisy chaining and polling.
- (c) Design the hardware interface circuit for interfacing 8251 with 8086. Set the 8251A in asynchronous mode as a transmitter and receiver with even parity enabled, 2 stopbits, 8 bits character length, frequency 160 kHz and band rate 10 k. Write an ALP to transmit 100 bytes of data string starting at location 2000 : 5000 H.

SECTION - II

- 4 (a) Do as directed : 10
- (i) What is the function of code segment?
- (ii) List the pointers and index registers.
- (iii) Explain the function of direction flag.
- (iv) Identify the following addressing mode
MOV AX, [Bx]
- (v) Explain the instruction XCHG.
- (vi) J_2 and JE are same instructions - State true or false.
- (vii) Explain the instruction HLT.

- (viii) Why 8086 is known as 16-bit processor?
- (ix) State the syntax, error and correct it in the instruction if necessary.
 ADD [BX][SI], AX
- (x) Which pins are provided on 8086 to give hardware interrupts.
- (b) (i) Explain any three addressing modes with example. **6**
- (ii) Explain the following directives : **4**
- (a) Offset
- (b) Length
- 5** (a) Write a program to add ten 16 bit binary no. to give a 32 bit result. And find the average of the numbers offset = 2000 H. **8**
- (b) Explain the process of passing the parameters in a procedure. **7**
- OR**
- 5** (a) Write a program to find largest no. of a given unordered array. **5**
- (b) What is prefetched queue? How it is useful in fast execution? Explain pipelining. **7**
- 6** Attempt any **three** : **15**
- (i) Explain the difference between near and far CALL.
- (ii) Explain in detail the function of type 1 interrupt. Explain the instruction to set and reset trap flag.
- (iii) Explain the DOS interrupt INT 21H with five different parameters for key board and video processing.
- (iv) Explain interrupt vector table.
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