

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 3087

Roll No.

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B.Tech.

(SEM. V) ODD SEMESTER THEORY EXAMINATION 2012-13
MICROPROCESSORS & APPLICATIONS

Time : 3 Hours

Total Marks : 100

Note : (1) Attempt all questions.

(2) Notations used have usual meaning.

(3) Assume any relevant data, if missing.

1. Attempt any **FOUR** parts of the following : **(5×4=20)**
 - (a) Explain the evolution of Microprocessor in brief.
 - (b) What do you mean by timing diagram ?
 - (c) Explain why the $AD_0—AD_7$ lines in 8085 are multiplexed.
 - (d) Explain how multiprogramming has become faster due to segmented memory ?
 - (e) Explain various addressing modes of 8085.
 - (f) What is stack pointer ? Explain its uses.
2. Attempt any **FOUR** parts of the following : **(5×4=20)**
 - (a) Mention the addressing modes of the following 8086 instructions :
 - (i) CALL NEAR [BX]
 - (ii) SHR AX, CL

- (iii) DEC WORD PTR 4243 [BX]
 - (iv) JMP 4243
 - (v) INT 10
- (b) It is required to initialize CS with 37F6H. Explain how it can be done ?
 - (c) What is the difference between logical address and physical address ? What is the difference between MOV AX, [1234H] and MOV AX, 1234H instructions ?
 - (d) How many interrupts are available in 8086 ? List the predefined software interrupts available in 8086.
 - (e) Describe the difference between a JUMP and a Call instruction.
 - (f) In 8086 Maximum Mode, explain RQ/GT₀ and RQ/GT₁ Pins.
3. Attempt any **TWO** parts of the following : (10×2=20)
- (a) In an 8086 based minimum mode system, show how the required lines are multiplexed and buffered.
 - (b) Draw and explain the architecture of 8086.
 - (c) What is the meaning of C/D, RXD, RXC DSR and TXD in 8251 ? Explain the mode word and command word of 8251 ?
4. Attempt any **TWO** parts of the following : (10×2=20)
- (a) Explain the operation of DMA Controller and draw the functional block diagram of 8257.
 - (b) Write a note on 8254. Explain the programming and Modes available.

- (c) What are special features of 0808/0809 ADC ? Explain its Internal Architecture. What would be the largest output of an 8-bit DAC that produces 1 V for the digital input 00110010 ?
5. Attempt any **TWO** parts of the following : **(10×2=20)**
- (a) How many memory banks the 80386 has ? What is the size of it ? Why protection feature is present in 80386 ?
- (b) Write technical notes to differentiate between Pentium and Power PC.
- (c) Write short notes on any **TWO** of the following :
- (i) Why is 8051 called a modified Harvard architecture ?
- (ii) How do 8051 ports differ from 8255 ports ?
- (iii) Compare Microprocessor 8085 Vs Microcontroller 8051.