



PAPER II

B. Tech.

(SEM. V) (ODD SEM.) EXAMINATION, 2009-10
MICROPROCESSOR & ITS APPLICATION

Time : 3 Hours]

[Total Marks : 100

Note : All questions carry **equal** marks.

1 Attempt any **four** of the following : **5x4=20**

- (a) Draw the timing diagram of the instruction RST 5 and explain in detail.
- (b) Explain the following instructions :
 - (i) DAD H
 - (ii) RM
 - (iii) RNC
 - (iv) DAA
- (c) Explain the significance of memory segmentation in 8086. Name all segment registers.
- (d) Explain all handshaking signals of 8255 in mode-1 output mode with the help of their timing diagram.

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- (e) Differentiate between vectored and non vectored interrupt. Explain how 8259 will communicate ISR address to 8085 on receiving an interrupt signal.
- (f) Differentiate between 80186 and 80286 architecture.

2 Attempt any four of the following : 5x4=20

- (a) Differentiate between absolute decoding and linear decoding for memory mapping. Which method is better? Justify your answer.
- (b) Explain different addressing modes of 8085. Identify the addressing mode of following instructions.
 - (i) RCR
 - (ii) ANI B, 02H
 - (iii) MOV B, M
- (c) Differentiate between minimum mode and maximum mode of 8086.
- (d) What do you mean by Assembler Directives? Explain the following directives.
 - (i) Byte PTR
 - (ii) Length
 - (iii) Assume
- (e) Explain the function of USART in brief. What is the function of SYNDET/BRDET pin of 8251.
- (f) Differentiate between real mode memory operation and protected mode memory operation.

3 Attempt any two of the following : 2x10=20

- (a) (i) A string of readings is stored in memory location starting at XX90H and the end of the string is indicated by the byte 0DH. Write a program to check each byte in the string and save the bytes in the range 30H to 39 H (both inclusive) in memory location starting from XX20H.
- (ii) Setup an 8254 squarewave generator with 1ms period, if the input frequency to 8254 is 1MHz. Write initialization instructions.
- (b) (i) Write an assembly language program to sort the set of 8 numbers stored in memory locations starting at XX50H, in ascending order.
- (ii) Write initialization instructions for the 8259A interrupt controller to meet the following specifications.
 - (a) Interrupt vector address 2090H
 - (b) Call address interval of 8 bits
 - (c) Nested mode
- (c) Explain the interrupt structure of 8085.

4 Attempt any two of the following : 2x10=20

- (a) Write a far procedure to divide a 32 bit number using 16 bit number.
- (b) Write an A.L.P. for checking whether the given string is 'palindrom' or not. If it is, then display 00 at an output port, else 01 at an output port.
- (c) Explain 8086 stack operation in detail.

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5 Attempt any two of the following : 2x10=20

- (a) Describe the structure of 8086 processor and compare it with other like 80286 and 80486.
 - (b) Explain the architecture of 8051 micro controller and compare it with a general purpose processor.
 - (c) Explain 8255 mode-2 operation in detail.
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