

First Semester Examination- 2010
MICROPROCESSOR AND ASSEMBLY LANGUAGE PROGRAMMING
(New and Old Course)

Time:3 Hours

Full Marks:70

Answer question No. **1** which is compulsory and any **five** from the rest.
The figures in the right-hand margin indicate marks.

1. Answer the followings: [2*10]

- (a) Why crystal is preferred as clock in any microprocessor clock circuit ?
 - (b) What do you mean by tri-state logic ?
 - (c) What is the need for ALE signal in 8085 microprocessor ?
 - (d) In 8085 processor which is called as lower order register and which is called as higher order register ?
 - (e) Differentiate between unidirectional buffer and bi-directional buffer.
 - (f) What do you mean by the multiplexing of the bus ?
 - (g) What is SIM and RIM instructions ?
 - (h) Specify how a program counter is useful in program execution ?
 - (i) Explain the execution of the instruction CMA M in 8085.
 - (j) How many modes of operations are there for PPI 8255 ?
2. (a) Write a 8085 program to generate a delay of 0.6 sec for the given crystal frequency of 5 MHz. [5]
- (b) List out the similarities between CALL_RET and PUSH_POP instructions. [5]
3. (a) Draw the timing diagram of op-code and memory write machine cycle of 8085 for following instructions: MOV V,M; MVI D, data; IN OL; OUT 01; LDA 8000; RST7. [5]
- (b) What is pipelining ? How it is achieved in 8086 ? Discuss in brief. [5]
4. (a) Explain the differences between memory and I/O. [5]
- (b) List the 8086 addressing modes and give an example of each. [5]
5. (a) Convert the following hexadecimal numbers to equivalent decimal numbers [5]
- (i) AE
 - (ii) F9
 - (iii) 5B1
 - (iv) 66

(v) CA

(b) What is 1's complement of binary number ? Find 1's complement of the following binary numbers [5]

(i) 1010

(ii) 1101

(iii) 11011

(iv) 0000

6. (a) Explain what is DMA data transfer scheme. Discuss the function of DMA data controller 8257. [5]

(b) Explain SIM Instruction. Discuss the bit pattern of the accumulator for SIM instruction. [5]

7. (a) Write an assembly language program for two 8-bit number multiplication, where the product being of 16bits. [6]

(b) What is modular programming, give the advantages and disadvantages of modular programming. [4]

8. Write short notes of the followings: [5+5]

(a) Stack

(b) Vectored interrupt

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