



MANIPAL UNIVERSITY
JAIPUR

SCHOOL OF COMPUTING AND IT
4th Semester; First Sessional Examination, February, 2017
Branch: B. Tech (CSE/IT/CCE)
OPEN BOOK EXAMINATION

Subject Code: CS1403
Max. Marks: 20

Subject Name: Microprocessors & Microcontrollers
Duration : 1 hour

Instructions:

1. All questions are compulsory & missing data if any can be suitably assumed.
2. Numbers in [] indicates marks.
3. You are allowed to bring **at most two units of bound reference**.
4. You may bring photocopies of text/reference books, but it must be in bound format.

- Q.1 a) Explain the concept of pipelining in 8086 microprocessor. [2]
b) Explain the functioning of address compute block (Σ) of BIU in 8086 architecture. [2]
- Q.2 Describe the difference between the following instructions [2]
a) MOV AX, 3437H and MOV AX, [3437H]. [2]
b) MOV BX, [AX] and MOV BX, AX [2]
- Q.3 If the stack segment register contains 3000H and the stack pointer register contains 8434H, then [1]
a) What is the physical address of the top of the stack? [1]
b) Determine the content of SP after execution of following program. [3]
MOV AX, 1234h
MOV BX, 2344h
PUSH AX
PUSH BX
POP CX
- Q.4 a) Write an assembly language program to subtract two 32 bit numbers. [2]
b) For a given data in register DL=11111111b, write a program to clear the lower nibble of the DL and then exchange the lower nibble with upper nibble. [2]
- Q.5 For the program given below, find the final output & explain execution of each instruction with the help of suitable comments. [4]

```
ORG 100h
MOV AL, -5
SUB AL, 127
JO label1
INC AL
JMP exit
label1:
DEC AL
exit:
RET
```

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