



UNIVERSITY OF THE PUNJAB

Third Semester – 2019

Examination: B.S. 4 Years Program

Roll No. in Fig.

Roll No. in Words.

PAPER: Computer Organization and Assembly Language MAX. TIME: 15 Min.

Course Code: IT-203/21402 Part-I (Compulsory) MAX. MARKS: 10

Signature of Supdt.:

Attempt this Paper on this Question Sheet only.

Please encircle the correct option. Division of marks is given in front of each question.

This Paper will be collected back after expiry of time limit mentioned above.

Q.1. Encircle the right answer, cutting and overwriting is not allowed. (1x10=10)

- I. Assume AL=C5;BL=48 what will be status of sign flag and carry flag after the execution of instruction SUB AL,BL?
- Sign flag reset ,Carry flag reset
 - Sign flag reset ,Carry flag set
 - Sign flag set ,Carry flag reset
 - Sign flag set ,Carry flag set
- II. How many times the loop will executed in the following code?
- ```
AA: MOV CH,0
 MOV DL,'A'
 MOV AH,02
 INT 21H
 INC CH
 JNZ AA
```
- Zero time
  - One time
  - 255 time
  - 256 time
- III. SP register is associated with \_\_\_\_\_ by default:
- DS
  - CS
  - ES
  - SS
- IV. Which instruction will invert bit#3,4,and 5 of Register DL keeping the remain bits unchanged.
- NOT DL,26h
  - XOR DL ,13h
  - AND DL,13h
  - None of above
- V. The input character getting from console is placed in \_\_\_\_\_ register.
- AX
  - AH
  - AL
  - DL
- VI. For display a character on screen which number is placed in ah register.
- 01h
  - 02h
  - 09h
  - None of these
- VII. Assume the following data is loaded at offset 01A0h:
- ```
V1 DB 41h
V2 DW 5678h
V3 DB 'PU Lahore'
```
- Give the offset address assigned to variable C.
- 01A3
 - 01A8
 - 01A2
 - None of above
- VIII. Assume SI=0100,DI=0200 Assume Direction Flag is reset. What would be the contents of SI and DI after execution of instruction of LOADSB twice?
- SI=0102 DI=0200
 - SI=0104 DI=0200
 - SI=0100 DI=0202
 - SI=0100 DI=0204
- IX. Assume SP=0048. What would be the value of SP register after execution of PUSH BX instruction twice?
- SP=0044
 - SP=0046
 - SP=0050
 - SP=0052
- X. If the decimal number 20 is shifted left by 2 bits the new value will be _____?
- 10
 - 20
 - 80
 - 160



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MAX. TIME: 2 Hrs. 45 Min.

MAX. MARKS: 50

ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

Q.2. Write short answers to the following questions.

(4x5=20)

- I. Assume DL contains the ASCII code of Lower case letter. Write instructions to convert it to upper case and print it.(use some logic instruction for conversion)
- II. Assume the following data is loaded starting at offset 0300h:
A DB 41h
B DW 5678h
B1 DD 1234h
C DB 'HELLO'
Give the offset address assigned to variable C.
- III. A memory location has physical address 93FC4h that corresponds to offset address 1FC4h. Calculate the segment address and the maximum possible physical address in this segment.
- IV. Assume SI=0100, DI=0200;CX=0005. Assume Direction flag is set. What would be the contents of SI, DI and CX after the execution of instruction CMPSW twice?

Q.3. Long questions.

(2x15=30)

- I. Write an Assembly Language Program that prompts the user to enter two string, than it will find that the second string is the substring of first or not.

Sample execution:

i)

Enter first string: **Hello World**

Enter second string: **ello**

Yes it is Substring

ii)

Enter first string: **Hello World**

Enter second string: **elloabc**

Not a substring

- II. a) Write down the note on all string instructions and also explain them with help of examples.
b) Write down the name of different registers, also explain the purpose of all register that are used?