Total Marks: 30   **Instructor: Muhammad Danish Ali**

Name: Ahmad   **Registration Number:** SU-23-01-001-005

Note: Attempt all questions, each question carries equal marks.

Q1.Choose the Correct Answer   **[CLO-1]**

1. **What does the JG instruction do?**
   A) Jump if less than
   B) Jump if greater
   C) Jump if equal
   D) Jump always
   Answer: A

2. **What is the purpose of the instruction mov bl, 3 in the program?**
   A) It stores the result of comparison
   B) It clears the BL register
   C) It loads the value 3 into BL for comparison
   D) It adds 3 to AL
   Answer: C

3. **What is the purpose of the CMP AL, BL instruction?**
   A) To add AL and BL
   B) To compare AL with BL
   C) To multiply AL and BL
   D) To move BL into AL
   Answer: B

4. **What is the value of AL immediately after mov al, 8 executes?**
   A) 0
   B) 1
   C) 8
   D) 3
   Answer: C

5. **What instruction stops the program execution?**
   A) MOV
   B) CMP
   C) JG
   D) HLT
   Answer: D

Q2.Write an assembly program to multiply two signed 8-bit numbers: 73H and 10H, using registers AL and BL.

Show the result in AX. [CLO-2]

Answer:

mov al, 73h

mov bl, 10h

cbw

imul bl

Q3.Write an assembly program to divide an unsigned 16-bit number 0021H by 0005H. Use AX as the dividend and

BX as the divisor. [CLO-2]

Answer:

mov ax, 0021h

mov bx, 0005h

xor dx, dx

div bx

Q4.Write an assembly program to display the message "Microprocessor and Assembly Language" on the screen.

[CLO-2]

Answer:

mov ah, 09h

mov dx, offset msg

int 21h

int 20h

msg db 'Microprocessor and Assembly Language$', 0

Q5.Write an assembly program that compares two values 5 and 6 in AL and BL registers. Use the JNE instruction

to jump if they are not equal. Assign AL a value of 9 if not equal, otherwise 0. [CLO-2]

Answer:

mov al, 5

mov bl, 6

cmp al, bl

jne not_equal

mov al, 0

jmp done

not_equal:

mov al, 9

done:

Q6.Write an assembly program that compares two signed numbers 8 and 3 in AL and BL registers. Use the JG instruction to jump if AL is greater than BL. Set AL to 1 if greater, otherwise set AL to 0. End the program properly. **[CLO-2]**

Answer:

mov al, 8

mov bl, 3

cmp al, bl

jg greater

mov al, 0

jmp endp

greater:

mov al, 1

endp: