

KATHMANDU UNIVERSITY
End Semester Examination [C]
November/December, 2023

Marks Scored:

Level : B.E./B.Sc.

Course : COMP 231

Year : II

Semester : II

Exam Roll No. :

Time: 30 mins.

F. M. : 10

Registration No.:

Date 26 NOV 2023

SECTION "A"

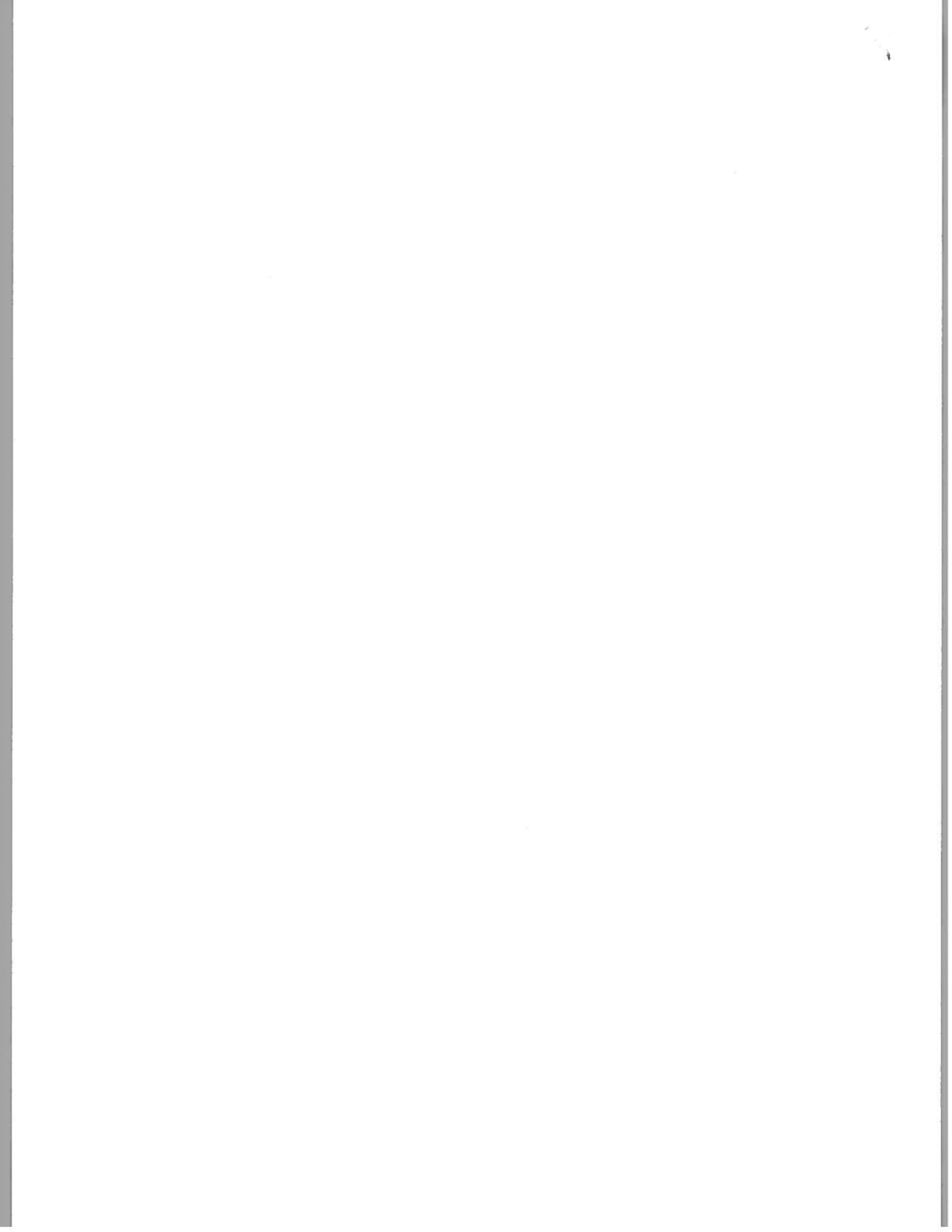
[20 Q. × 0.5 = 10 marks]

Mark [X] in the most appropriate option. All symbols have their usual meanings.

- Which of the following addressing method does the instruction, MOV AX,[BX] represent?
 Register indirect addressing mode
 Direct addressing mode
 Register addressing mode
 Register relative addressing mode
- Which of the following is the **CORRECT** sequence of operations in a microprocessor?
 I/O read, opcode fetch, memory write, memory read, I/O write
 Opcode fetch, memory write, memory read, I/O read, I/O write
 I/O read, opcode fetch, memory read, memory write, I/O write
 Opcode fetch, memory read, memory write, I/O read, I/O write
- Consider the following set of 8085 instruction.
MVI A, 82H
ORA A
JP DPLY
XRA A
DPLY: OUT PORT1
HLT
The output at PORT1 is
 00H FFH 92H 11H
- The _____ can refer to either the time period during which one instruction is fetched from memory and executed when a computer receives a machine language instruction.
 Instruction fetch operation Instruction cycle
 Memory data register Instruction decoder
- Assume that registers 'A' and 'B' contain 50H and 40H respectively. After instruction MOV A, B, what will be the contents of registers A and B?
 50H, 50 50H, 40H 40H, 40H 60H, 40H
- In the instruction set,
MOV CX, BA03H
WAIT: DEC CX
NOP
JNZ WAIT
RET
if the zeroth condition is satisfied then, for execution, the JNZ instruction takes
 1 clock cycle 2 clock cycles 3 clock cycles 4 clock cycles

26 NOV 2023

18. While using a frequency counter for measuring frequency, two modes of measurement are possible: Period time and Frequency mode. There is a 'cross-over frequency' below which the period mode is preferred. Assuming the crystal oscillator frequency to be 4MHz, the crossover frequency is given by
 8 MHz 2 MHz 5 KHz 1 KHz
19. Which statement is valid for LDA 9511H?
 Store the result from A to 9511 Load the contents of 9511 in register A
 Transfer the contents of A to B register Move the results from 9511 to A
20. The number of PUSH instructions and POP instructions in a subroutine must be
 PUSH instructions must be greater than POP instructions
 POP instructions must be greater than PUSH instructions
 Both must be equal
 Instructions may be any kind



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SECTION "B"
[6Q. × 4 = 24 marks]

Attempt *ANY SIX* questions.

1. Discuss instructions sets of 8086 Microprocessor with example.
2. What is Direct Memory Access (DMA)? Explain internal configuration of DMA Controller.
3. Explain Harvard Architecture with a diagram.
4. Explicate functional block diagram of 8085 Microprocessor. What are the control signals in 8085 processor?
5. What is stack? Explain stack overflow and underflow using assembly language.
6. Draw and describe pin diagram of Latches 8282. What are the common features of Latches 8282 and Bus transceiver 8286?
7. What are the 8237 registers? Describe how the DMA can be implemented in 8086 processors?

SECTION "C"
[2Q. × 8 = 16 marks]

Attempt *ANY TWO* questions.

8. Differentiate between 8086 and 8088 Microprocessors. Discuss different types of registers found in x86 processor.
9. Discuss internal configuration of 8259 Programmable Interrupt Controller. What are the steps of events observed in 8259?
10. What are the implications of 8254 programmable interval timer? Define operating modes of 8254 with wave forms.

