

SOE

KATHMANDU UNIVERSITY  
End Semester Examination  
March, 2025

Marks Scored:

Level : BIT

Course : COMP 231

Year : I

Semester : II

Exam Roll No. :

Time: 30 mins.

F. M. : 10

Registration No.:

Date

25 MAR 2025

SECTION "A"  
[20Q. × 0.5= 10 marks]

Choose and mark [X] in the most appropriate option from each set of choices

- Which of the following components is NOT part of the microprocessor?  
 Register                       Control Unit                       ALU                       Clock Generator
- Which register holds the memory address of the next instruction to be executed?  
 Program Counter                       Instruction Register  
 Stack Pointer                       Accumulator
- The width of the data bus in a microprocessor determines:  
 The speed of instruction execution                       The number of bits processed simultaneously  
 The size of addressable memory                       The number of instructions in the instruction set
- Which of the following is NOT a valid addressing mode in assembly language?  
 Immediate                       Indirect                       Random                       Direct
- Which assembly instruction is used to branch to a label if the Zero Flag is set?  
 JMP                       JNZ                       JZ                       JP
- Consider the following code, What does the code compute?  
LXI H, 2500H  
MOV A, M  
INX H  
MOV B, M  
ADD B  
 Sum of the contents of memory locations 2500H and 2501H  
 Difference between the contents of memory locations 2500H and 2501H  
 Logical AND of the contents of memory locations 2500H and 2501H  
 Moves data between the two locations
- If the accumulator contains F0H, what will be its content after executing the instruction RLC?  
 E1H                       F1H                       01H                       81H
- In 8086 assembly language, which register is commonly used as the stack pointer?  
 AX                       BP                       SP                       DX
- Which of the following is the purpose of an assembler in 8086 assembly language programming?  
 To convert assembly language code into machine code  
 To execute machine code directly  
 To provide debugging tools for assembly language code  
 To generate the source code for high-level programming languages

10. Which of the following 8086 instructions is used to perform a conditional jump based on the comparison of two operands?  
 JMP                     JE                             JC                             LOOP
11. Which 8086 instruction is used to transfer data from a 16-bit register to a memory location?  
 MOV                     SHL                             POP                             ADD
12. Which of the following is true about the "DB" directive in 8086 assembly language?  
 It defines a byte of data and initializes it with a given value  
 It defines a word of data  
 It defines a segment of memory for data storage  
 It is used to declare a label
13. Which register in the 8086 microprocessor is used to hold the offset address for code segment?  
 AX                     BX                             IP                             SP
14. In the 8086 microprocessor, what is the function of the "INT" instruction?  
 To perform an interrupt operation  
 To transfer data from one register to another  
 To jump to a specific address  
 To enable a hardware interrupt
15. Which of the following pins in the 8086 microprocessor are used for address bus multiplexing?  
 A15-A0                     AD15-AD0                     S0-S7                             T1-T4
16. In the microprocessor, address decoding is used to:  
 Convert machine code into assembly language  
 Determine the specific memory or I/O device to access based on the address provided by the microprocessor  
 Set the flags for arithmetic operations  
 Fetch the instruction from the memory
17. What is the effect of the instruction CMP AX, BX in 8086?  
 Compares the values in AX and BX and stores the result in AX.  
 Compares the values in AX and BX and sets the condition flags based on the result.  
 Moves the value of AX into BX.  
 Performs a subtraction of AX and BX and stores the result in AX.
18. Which of the following instructions will NOT affect the flags in the 8086?  
 ADD                     SUB                             MOV                             CMP
19. In 8237 DMA Controller, if each device connected to a channel is assigned to a fixed priority then it is said to be in \_\_\_\_\_.  
 Rotating Priority Scheme  
 Fixed Priority Scheme  
 Rotating Priority and Fixed Priority Scheme  
 Interrupt Stage
20. Which of the following is the correct sequence of interrupt priority in the 8085 microprocessor (from highest to lowest)?  
 TRAP, RST7.5, RST6.5, RST5.5                     RST5.5, RST6.5, TRAP, RST7.5  
 TRAP, RST5.5, RST6.5, RST7.5                     RST6.5, TRAP, RST7.5, RST5.5