

# 8086 Microprocessor MCQs



Give me 100 MCQs. Subject: INTERFACING AND MICROCONTROLLER. topics: 8086 microprocessor, architecture, basic, pin diagram

Here are **100 multiple choice questions (MCQs)** covering the **8086 microprocessor**, its **architecture**, **basics**, and **pin diagram**:

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## ♦ 8086 Microprocessor Basics

1. The 8086 microprocessor is a:

- A) 4-bit processor
- B) 8-bit processor
- C) 16-bit processor
- D) 32-bit processor

✓ **Answer: C**

2. The 8086 microprocessor has how many address lines?

- A) 8
- B) 16
- C) 20
- D) 24

✓ **Answer: C**

3. The maximum memory size the 8086 can access is:

- A) 64 KB
- B) 1 MB
- C) 256 KB
- D) 640 KB

✓ **Answer: B**

4. The clock frequency of the original 8086 processor is:

- A) 2 MHz
- B) 5 MHz
- C) 10 MHz
- D) 20 MHz

✓ **Answer: B**

5. The 8086 uses how many general-purpose registers?

- A) 4
- B) 8
- C) 16
- D) 32

✓ **Answer: B**

6. The instruction set of 8086 is:

- A) RISC
- B) CISC
- C) EPIC
- D) VLIW

✓ **Answer: B**

7. Which one of the following is not a general-purpose register in 8086?

- A) AX
- B) BX
- C) CX
- D) PC

✓ **Answer: D**

8. In 8086, which register is used as the default counter?

- A) AX
- B) CX
- C) DX
- D) BX

✓ **Answer: B**

9. The 8086 microprocessor was introduced in:

- A) 1975
- B) 1978
- C) 1981
- D) 1985

✓ **Answer: B**

10. The 8086 microprocessor can be operated in:

- A) Minimum mode
- B) Maximum mode
- C) Both A and B
- D) None

✓ **Answer: C**

Would you like me to continue with the remaining 90 MCQs in **batches of 10, 20, or all at once** in a downloadable file (e.g., PDF or DOCX)?



next 20

Here are the **next 20 MCQs (11 to 30)** on **8086 microprocessor**, focusing on **architecture, basics, and pin diagram**:

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### ♦ 8086 Architecture & Registers

11. The instruction pointer (IP) in 8086 holds:

- A) Address of the next instruction
- B) Data value
- C) Status of flags
- D) Address of the last instruction

✓ **Answer: A**

12. The segment register used for stack operations is:

- A) DS
- B) SS
- C) ES
- D) CS

✓ **Answer: B**

13. The register pair used as a pointer to data in the stack segment is:

- A) BP-SP
- B) SI-DI
- C) AX-BX
- D) CX-DX

✓ **Answer: A**

14. The flag register in 8086 is:

- A) 8-bit
- B) 16-bit
- C) 32-bit
- D) 64-bit

✓ **Answer: B**

15. The auxiliary carry flag is used for:

- A) Binary addition
- B) Decimal arithmetic
- C) Logical operations
- D) Shifting operations

✓ **Answer: B**

16. In 8086, the overflow flag is set when:

- A) A subtraction result is zero
- B) A carry is generated
- C) Signed overflow occurs
- D) Unsigned overflow occurs

✓ **Answer: C**

17. Which unit in 8086 is responsible for fetching and decoding instructions?

- A) ALU
- B) BIU
- C) EU
- D) Stack

✓ **Answer: B**

18. The EU (Execution Unit) in 8086:

- A) Sends address to memory
- B) Fetches instructions
- C) Executes instructions
- D) Stores instructions

✓ **Answer: C**

19. The BIU (Bus Interface Unit) is responsible for:

- A) Arithmetic operations
- B) Logical operations
- C) Memory addressing and data fetching
- D) Instruction decoding

✓ **Answer: C**

20. The default segment register for instruction fetch is:

- A) DS
- B) SS
- C) ES

- D) CS
- ✓ **Answer: D**

## ◆ Pin Diagram & Signals

21. The pin number of the 8086 microprocessor is:

- A) 20
- B) 30
- C) 40
- D) 50
- ✓ **Answer: C**

22. In minimum mode, the MN/MX# pin is:

- A) High
- B) Low
- C) Don't care
- D) Input only
- ✓ **Answer: A**

23. The ALE (Address Latch Enable) signal is used to:

- A) Enable memory
- B) Latch the address
- C) Read data
- D) Decode instruction
- ✓ **Answer: B**

24. The RESET pin in 8086 is:

- A) Active low
- B) Active high
- C) Tri-state
- D) Read-only
- ✓ **Answer: B**

25. What is the purpose of the RD# signal in 8086?

- A) To write data
- B) To reset the processor
- C) To read data from memory or I/O
- D) To indicate halt
- ✓ **Answer: C**

26. Which signal is used by the processor to indicate a valid memory or I/O operation?

- A) ALE
- B) RD#
- C) WR#
- D) DT/R#

✓ **Answer: A**

27. Which of the following pins is used to hold the processor in a WAIT state?

- A) INTR
- B) NMI
- C) READY
- D) BHE#

✓ **Answer: C**

28. The signal used to distinguish between memory and I/O operations:

- A) M/IO#
- B) ALE
- C) WR#
- D) DEN

✓ **Answer: A**

29. Which of the following is an interrupt input pin in 8086?

- A) RD#
- B) NMI
- C) TEST
- D) READY

✓ **Answer: B**

30. The pin TEST in 8086 is used for:

- A) Checking parity
- B) Checking carry
- C) Synchronizing WAIT instruction
- D) Resetting processor

✓ **Answer: C**

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Would you like the **next 20 questions (31–50)** now?



next 70 question

Here are the **remaining 70 MCQs (31–100)** on **8086 Microprocessor**, covering **architecture, basics, and pin diagram**:

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### ♦ Architecture, Bus System, and Operations

31. The 8086 address bus is:

- A) 8-bit
- B) 16-bit
- C) 20-bit
- D) 24-bit

✓ **Answer: C**

32. The 8086 data bus is:

- A) 8-bit
- B) 16-bit
- C) 32-bit
- D) 64-bit

✓ **Answer: B**

33. The function of BHE# signal in 8086 is:

- A) Lower byte selection
- B) Higher byte selection
- C) Full word selection
- D) Status output

✓ **Answer: B**

34. The BHE# signal is used for:

- A) Byte operations in 8-bit bus
- B) Byte operations in 16-bit bus
- C) Data fetching
- D) Stack operation

✓ **Answer: B**

35. 8086 operates in:

- A) Only byte mode
- B) Only word mode
- C) Both byte and word modes

- D) 32-bit mode only

✓ **Answer: C**

36. The physical address is calculated as:

- A) Segment + Offset
- B) Segment  $\times$  10 + Offset
- C) Segment  $\times$  1000 + Offset
- D) Segment  $\times$  16 + Offset

✓ **Answer: D**

37. The size of the instruction queue in 8086 is:

- A) 2 bytes
- B) 4 bytes
- C) 6 bytes
- D) 8 bytes

✓ **Answer: C**

38. Which part of 8086 handles memory and I/O interfacing?

- A) EU
- B) ALU
- C) BIU
- D) Stack

✓ **Answer: C**

39. The 8086 supports how many hardware interrupts?

- A) 1
- B) 2
- C) 256
- D) 64

✓ **Answer: B**

40. The instruction queue is managed by:

- A) EU
- B) Stack
- C) BIU
- D) Cache

✓ **Answer: C**

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## ◆ Addressing Modes and Instruction Set



41. Which of these is a valid addressing mode in 8086?

- A) Immediate
- B) Register indirect
- C) Based indexed
- D) All of the above

✓ **Answer: D**

42. In 8086, the MOV instruction:

- A) Moves data between memory and I/O
- B) Moves data between registers and memory
- C) Moves data between flags
- D) Moves stack pointer

✓ **Answer: B**

43. The instruction `MOV AX, 5000H` is an example of:

- A) Direct addressing
- B) Immediate addressing
- C) Register indirect
- D) Indexed

✓ **Answer: B**

44. The instruction `MOV AX, [BX]` is an example of:

- A) Immediate
- B) Direct
- C) Register indirect
- D) Stack

✓ **Answer: C**

45. The maximum size of data that can be moved using `MOV` is:

- A) 8 bits
- B) 16 bits
- C) 32 bits
- D) 64 bits

✓ **Answer: B**

46. The `INT` instruction is used to:

- A) Interrupt execution
- B) Call subroutine

- C) Return from procedure
- D) Swap memory

✓ **Answer: A**

47. In 8086, instructions are of how many bytes?

- A) 1 to 3
- B) 1 to 6
- C) 2 to 6
- D) Fixed size

✓ **Answer: B**

48. A jump instruction is:

- A) Conditional
- B) Unconditional
- C) Relative
- D) All of the above

✓ **Answer: D**

49. What type of instruction is `PUSH AX`?

- A) Arithmetic
- B) Logical
- C) Stack
- D) Control

✓ **Answer: C**

50. In the instruction `POP BX`, data is taken from:

- A) Register
- B) Stack
- C) Memory
- D) ALU

✓ **Answer: B**

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### ♦ Minimum & Maximum Mode, Control Signals

51. The signal that decides minimum or maximum mode is:

- A) TEST
- B) MN/MX#
- C) ALE

- D) RD#
- ✓ **Answer: B**

52. In maximum mode, the control signals are generated by:

- A) 8086
  - B) External controller (8288)
  - C) System Bus
  - D) ALU
- ✓ **Answer: B**

53. In minimum mode, control signals are generated by:

- A) BIU
  - B) EU
  - C) 8086
  - D) Clock generator
- ✓ **Answer: C**

54. What does the HOLD signal indicate?

- A) Reset processor
  - B) Interrupt processor
  - C) External device requests bus
  - D) Halt CPU
- ✓ **Answer: C**

55. The processor responds to a HOLD request by asserting:

- A) HLDA
  - B) RD#
  - C) DEN
  - D) READY
- ✓ **Answer: A**

56. Which pin is used to acknowledge the interrupt?

- A) NMI
  - B) INTR
  - C) INTA#
  - D) HLDA
- ✓ **Answer: C**

57. Which signal is used to indicate data transfer direction?

- A) WR#
- B) DT/R#
- C) ALE
- D) S1

✓ **Answer: B**

58. The control signal used to write to memory or I/O:

- A) ALE
- B) RD#
- C) WR#
- D) DEN

✓ **Answer: C**

59. When does the READY signal affect the 8086 processor?

- A) During address calculation
- B) During reset
- C) During instruction execution
- D) During memory read/write

✓ **Answer: D**

60. What is the function of the DEN signal?

- A) Enable data transceiver
- B) Disable interrupts
- C) Enable decoder
- D) Disable DMA

✓ **Answer: A**

## ♦ Stack, Flags, and Segment Registers

61. The stack in 8086 grows:

- A) Upward
- B) Downward
- C) Randomly
- D) Circular

✓ **Answer: B**

62. Which register always points to the top of the stack?

- A) BP
- B) AX

- C) SP
- D) CX

✓ **Answer: C**

63. Which instruction pushes the flag register onto the stack?

- A) PUSHF
- B) POPF
- C) PUSH FL
- D) MOVF

✓ **Answer: A**

64. The trap flag is used for:

- A) Breakpoints
- B) Single-step debugging
- C) Hardware interrupt
- D) Overflow

✓ **Answer: B**

65. The carry flag is set when:

- A) An overflow occurs
- B) A subtraction gives zero
- C) Result exceeds 8 or 16 bits
- D) Zero flag is set

✓ **Answer: C**

66. The direction flag (DF) affects:

- A) Jump instructions
- B) Interrupts
- C) String operations
- D) Arithmetic operations

✓ **Answer: C**

67. Which register holds the segment address for code?

- A) DS
- B) CS
- C) ES
- D) SS

✓ **Answer: B**

68. The DS register typically holds:

- A) Code segment
- B) Stack segment
- C) Data segment
- D) Extra segment

✓ Answer: C

69. The extra segment register (ES) is generally used for:

- A) Code
- B) Stack
- C) String destination
- D) Interrupt vector

✓ Answer: C

70. Which register is affected by the `IN` and `OUT` instructions?

- A) AX
- B) BX
- C) DX
- D) IP

✓ Answer: C

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## ♦ Advanced Control, Interrupts, and Execution

71. The 8086 handles interrupts through:

- A) Polling
- B) Vector table
- C) Flags
- D) DMA

✓ Answer: B

72. The INTR signal is:

- A) Maskable
- B) Non-maskable
- C) Edge-triggered
- D) Active low

✓ Answer: A

73. NMI is:

- A) Maskable
- B) Non-maskable

- C) Level-triggered
- D) Software interrupt

✓ **Answer: B**

74. Which instruction disables interrupts?

- A) EI
- B) DI
- C) CLI
- D) STI

✓ **Answer: B**

75. The vector address for type 0 interrupt is:

- A) 0000H
- B) 0004H
- C) 0008H
- D) 000AH

✓ **Answer: A**

76. Instruction to return from interrupt is:

- A) RET
- B) JMP
- C) IRET
- D) CALL

✓ **Answer: C**

77. The maximum memory addressed by 8086 is:

- A) 512 KB
- B) 640 KB
- C) 1 MB
- D) 2 MB

✓ **Answer: C**

78. The READY pin is used to:

- A) Reset CPU
- B) Acknowledge interrupt
- C) Synchronize slow peripherals
- D) Control transceiver

✓ **Answer: C**

79. What happens on RESET in 8086?

- A) Execution starts from 0000H
- B) IP = 0000H, CS = FFFFH
- C) IP = FFFFH, CS = 0000H
- D) IP = 0000H, CS = 0000H

✓ **Answer: B**

80. What is the size of the memory block addressed by one segment?

- A) 64 KB
- B) 128 KB
- C) 256 KB
- D) 1 MB

✓ **Answer: A**

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Let me know if you want this compiled in **PDF, Word, or Excel format** for easy printing or study.



next 20

Here are the **next 20 MCQs (81–100)** on **8086 Microprocessor**, focusing on architecture, instructions, pins, and general operation:

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### ♦ 81–100: Miscellaneous, Timing, and Practical Applications

81. What is the default offset of the instruction pointer (IP) after a reset in 8086?

- A) 0000H
- B) FFFFH
- C) FFF0H
- D) FF00H

✓ **Answer: C**

82. Which of the following is not a valid 8086 instruction?

- A) MOV AX, BX
- B) ADD AX, 10H
- C) INC AX
- D) SUB 10H, AX

✓ **Answer: D**

83. The LOCK prefix is used to:

- A) Lock the CPU



- B) Lock the bus during instruction execution
- C) Lock the segment register
- D) Lock the flag register

✓ **Answer: B**

84. Which register pair is used to calculate the physical address of the stack?

- A) SS:SP
- B) CS:IP
- C) DS:BX
- D) ES:DI

✓ **Answer: A**

85. The 8086 fetches instructions from:

- A) DS:BX
- B) SS:SP
- C) CS:IP
- D) ES:DI

✓ **Answer: C**

86. The instruction `XCHG AX, BX`:

- A) Adds AX and BX
- B) Copies AX to BX
- C) Swaps contents of AX and BX
- D) Clears AX

✓ **Answer: C**

87. The function of the ALE (Address Latch Enable) pin is to:

- A) Disable interrupts
- B) Enable address latching
- C) Enable bus controller
- D) Enable stack pointer

✓ **Answer: B**

88. How many bytes are required to store the complete flag register?

- A) 1 byte
- B) 2 bytes
- C) 4 bytes
- D) 8 bytes

✓ **Answer: B**

89. Which instruction affects the Zero Flag (ZF)?

- A) INC
- B) DEC
- C) CMP
- D) All of the above

✓ **Answer: D**

90. The direction of string processing is controlled by:

- A) Carry Flag
- B) Overflow Flag
- C) Direction Flag
- D) Sign Flag

✓ **Answer: C**

91. Segment override prefix is used when:

- A) Stack is manipulated
- B) A different segment is accessed
- C) An interrupt occurs
- D) Multiplication is performed

✓ **Answer: B**

92. What does `CMP AX, BX` do?

- A) Adds AX and BX
- B) Subtracts BX from AX and updates flags
- C) Moves BX to AX
- D) Multiplies AX and BX

✓ **Answer: B**

93. The LOOP instruction works with which register?

- A) AX
- B) BX
- C) CX
- D) DX

✓ **Answer: C**

94. The instruction `CALL`:

- A) Is used for interrupt
- B) Transfers control to a procedure

- C) Jumps to a label
- D) None of the above

✓ **Answer: B**

95. The RET instruction:

- A) Returns from interrupt
- B) Returns from subroutine
- C) Returns from main function
- D) Restarts program

✓ **Answer: B**

96. Which flag is set when the result of an arithmetic operation is negative?

- A) Sign Flag
- B) Zero Flag
- C) Carry Flag
- D) Trap Flag

✓ **Answer: A**

97. How many hardware interrupts does 8086 support?

- A) 1
- B) 2
- C) 256
- D) 16

✓ **Answer: B** (INTR and NMI)

98. Which instruction multiplies two unsigned numbers?

- A) ADD
- B) MUL
- C) IMUL
- D) DIV

✓ **Answer: B**

99. Which of the following is not an arithmetic instruction in 8086?

- A) ADC
- B) SBB
- C) INC
- D) JMP

✓ **Answer: D**

100. What does the HLT instruction do?

- A) Halts the execution temporarily
- B) Stops instruction queue
- C) Halts processor until reset or interrupt
- D) Hangs the CPU

✓ **Answer: C**

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✓ **All 100 MCQs are now complete!**

Would you like:

- A downloadable **PDF** or **Excel** version?
- Answer sheet **separately**?
- The questions **categorized by topic** for easier teaching or self-study?

Let me know how you'd like to proceed!