

Model Questions Sets For Practice

Microprocessor ... 125

MODEL SET 1

Institution of Science and Technology
Bachelor Level/ First Year/ Second Semester/ Science
Microprocessor (CSC 162)

Time: 3 hours.

Full Marks: 60

Pass Marks: 24

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Long answer questions (any two)

[10*2=20]

1. Explain 8086 microprocessor architecture with the help of its BIU and EU.
2. Explain the operation of flags in the microprocessor. Discuss different types of flags with suitable examples.
3. Write a program in 8-bit Microprocessor to store 60h, Bah, 7Ch and 10h in the memory locations starting from 2000h. Add these data and store the result in 3000h and carry flag in 5000h. Explain all steps.

Short answer questions (any eight)

[8*5=40]

4. Explain about LDA 2000H operation and timing diagram with suitable example.
5. Write an assembly language program to display a string "I like programming in the assembly language" using 16 bit microprocessor code. Assume any necessary data.
6. What is Interrupt? Explain in detail about software interrupt.
7. Explain the Basic DMA Operation with required timing diagram. What are the uses of the DMA transfers.
8. Explain 8255 PPI with the help of a neat block diagram.
9. Why addressing modes are required in the Microprocessor? Discuss different types of addressing modes with suitable examples.
10. How can you achieve pipelining in the basic microprocessor? Explain any type of basic pipelining with suitable diagram.
11. Explain 80286 microprocessor architecture in brief.
12. Write short notes on
 - a. Howard Architecture
 - b. RS-232

MODEL SET 2

Institution of Science and Technology

Bachelor Level/ First Year/ Second Semester/ Science

Microprocessor (CSC 162)

Time: 3 hours.

Full Marks: 60
Pass Marks: 24*Candidates are required to give their answers in their own words as far as practicable.*

The figures in the margin indicate full marks.

Long answer questions (any two)**[10*2=20]**

1. Explain the block diagram of 80386 microprocessor architecture with the help of suitable facts and figures.
2. Why Addressing Modes are required? Explain different addressing modes of 8086 microprocessor with example.
3. Write a program in 8085 microprocessor to multiply two 16 bits numbers and store in the memory location starting from 3500h [Assume required memory address].

Short answer questions (any eight)**[8*5=40]**

4. Discuss different types of flags of 8085 microprocessor with suitable examples.
5. Explain about LDA 2000H operation and timing diagram with suitable example.
6. Write an assembly language program to add two 16-bit numbers (3467h and ACDCh).
7. What is Interrupt? Differentiate between vectored and non-vectored interrupt.
8. Explain about RS 232 interface with suitable example.
9. Explain 8251 USART with the help of a neat block diagram.
10. Explain the concept of multitasking used in 80286 microprocessor.
11. Write an assembly language program in 8086 to find the factorial of a given number.
12. Write short notes on
 - a. System Bus
 - b. Pipeline

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Long answer questions (Any two)

- [10*2=20]
1. Explain the block diagram of 8085 microprocessor with the help of suitable facts and figures.
 2. Explain the concept of real address mode and protected virtual address mode used in 80286 microprocessor.
 3. Write an assembly language program in 8085 to sort the given series of data in ascending order [Assume required memory locations].

Short answer questions (Any eight)

- [8*5=40]
4. Explain about the register organization of 8086 microprocessor.
 5. Write an assembly language program to display a string "I like programming in the assembly language" using 16 bit microprocessor code.
 6. What is address decoding? Explain address decoding using NAND gates only.
 7. Explain the Basic DMA Operation with required timing diagram. What are the uses of the DMA transfers.
 8. Why parallel communication is required? Explain different methods of parallel data transfer.
 9. Why addressing modes are required in the Microprocessor? Discuss different types of addressing modes with suitable examples.
 10. How can you achieve pipelining in the basic microprocessor? Explain any type of basic pipelining with suitable diagram.
 11. Write an assembly language program in 8085 to find the HCF of a given two numbers.
 12. Write short notes on
 - a. Intel Series
 - b. Paging

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Long answer questions (Any two)

[10*2=20]

1. Explain the block diagram of 8086 microprocessor with the help of EU and BIU.
2. Why paging is required? Explain register organization of 80386 micro processor.
3. Write a program in 8-bit Microprocessor to convert 8 bit binary number into 3 digit BCD. Explain all steps.

Short answer questions (Any eight)

[8*5=40]

4. Explain bus organization of 8085 microprocessor with the help of a neat diagram.
5. A 128 KB RAM is composed of four 32 KB RAMs. How all four RAM's are interfaced using address decoding techniques?
6. Write an ALP to add two 16 bit numbers in 8086 Architecture.
7. Differentiate between Von Neumann and Harvard Architecture.
8. Explain the functional block diagram of 80286 Architecture in brief.
9. What is Interrupt? Explain different types of Interrupt in brief.
10. Explain operation modes of 8255 PPI with the help of a neat diagram.
11. Why flags are required in the Microprocessor? Explain different flags used in 80286 microprocessor.
12. Write short notes on:
 - a. Pipeline
 - b. Serial communication

MODEL SET 5

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Full Marks: 60
Pass Marks: 24

Time: 3 hours.

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The figures in the margin indicate full marks.

Long answer questions (Any two)

[10*2=20]

1. Compare the features of 8085 microprocessor and 8086 microprocessor. Explain about time multiplexed address/data bus of 8085 microprocessor.
2. Explain the concept of paging in 80386 microprocessor
3. Write a program in assembly language to sort the data in descending order [assume required memory locations].

Short answer questions (Any eight)

[8*5=40]

4. Differentiate between PUSH and POP operations. Write a program to illustrate the use of PUSH operations.
5. Write an assembly language program to subtract two 16-bit numbers.
6. What do you understand by address decoding in the case of memory interfacing? Explain address decoding using 3 to 8 Decoder.
7. Which I/O interface is used in the 8-bit microprocessor? Explain different types of I/O instructions.
8. Why interrupt is required? Draw the block diagram of interrupt handler and explain it.
9. Explain the basic DMA Operations with required timing diagram.
10. Differentiate between serial and parallel communication.
11. Discuss about GDT and LDT of 80286 microprocessor.
12. Write short notes on:
 - a. Components of microprocessor
 - b. Features of 8086

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Long answer questions (Any two)

[10*2=20]

1. Explain the operations of 8085 microprocessor using block diagram. Justify that design of control unit is more difficult.
2. Explain register organization of 80386 microprocessor with suitable facts and figures.
3. Write a program in 8085 microprocessor to add multibyte binary addition. Here there are two n byte decimal numbers. Each number has been extended to (n+1)th byte where 00H will be stored. The count is stored in memory location 8E00H. The bytes of first number are placed in memory location 8E01H onwards. The bytes of second number are placed in memory location 8F01H onwards. The sum is stored in memory locations occupied by the first number i.e., 8E01H onwards.

Short answer questions (Any eight)

[8*5=40]

4. Explain about fetch operation and timing diagram.
5. Write assembly language program to multiply 05h and 06h. Explain all the steps.
6. What is a macro assembler? Explain it.
7. What are the functions of I/O interface? Explain it with suitable example.
8. Explain the operation of 8259 PIC with the help of its block diagram.
9. What are the application areas of serial and parallel communication? Explain the concept of serial and parallel transmission.
10. What are the features of 80286 microprocessor? Explain in brief.
11. Write a program in 8085 to divide a 16 bit number by a 8 bit number. Here LSB of dividend is stored in memory location 8DC1H and MSB of dividend is stored in memory location 8DC2H. 8 bit divisor is stored in memory location 8DC3H. After division the quotient is stored in memory location 8DC4H and the remainder is stored in memory location 8DC5H.
12. Write short notes on:
 - a. Descriptor
 - b. Application of Microprocessor

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Long answer questions (Any two)

1. Compare the features of 80286 and 80386 microprocessor. [10*2=20]
2. Explain register organization of 80286 microprocessor.
3. Explain 8255 PPI with the help of its block diagram and modes of operation.
4. Write a program in 8085 to multiply two 8 bit numbers. Multiplication is stored in memory location 8DB1H. Multiplier is stored in memory location 8DB3H. In memory location 8DB2H the number 00H is stored. After the multiplication LSB of product is stored in memory location 8DB4H and MSB of product is stored in memory location 8DB5H.

Short answer questions (Any eight)

5. What is flag? Explain its importance with suitable example. [8*5=40]
6. Discuss the bus system in 8085 microprocessor.
7. Draw the timing diagram of instruction MVIA, 36H and explain it.
8. Explain the function of following signals:
• ALE • INTR • TRAP
9. Write a program in 8085 microprocessor to subtract 16 bit number at 2000H from a 16 bit number at 2010H and store the result at 2020H.
10. Discuss the importance of interrupt in microprocessor based system. Explain how interrupt controller (8259) can be used to handle interrupts.
11. Observe the following program and write the content of accumulator, register B and flags after execution of each instruction (assume initially all flags are reset)
• MVIA, 45H • MVI B, 66H • ADD B
• ANI 63H • HLT
12. What are the various registers in 8086 microprocessor? Explain the function of each register.
13. Write short notes on:
a. Assembly language program
b. Paging operation in 80386

MODEL SET 8

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Full Marks: 60
Pass Marks: 24

Time: 3 hours.

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Long answer questions (Any two)

[10*2=20]

1. Why paging is required? Explain the concept of paging used in 80386 microprocessor.
2. How 8086 microprocessor is advanced than 8085 microprocessor? Explain memory organization of 8086 microprocessor.
3. Write a program in 8085 to find the sum of a series of (nine) 8 bit numbers (binary/decimal): Sum 16 bit/3 digit decimal maximum. Add the series of nine binary/decimal numbers stored in nine memory locations starting from 8D89H. The number count is stored in the memory location 8D80H. The sum is to be stored in two memory locations 8D8AH (LAB) and 8D8BH (MAB).

Short answer questions (Any eight)

[8*5=40]

4. Differentiate between microprocessor and microcontroller.
5. Explain pin diagram of 8085 microprocessor with the help of a neat diagram.
6. What is memory interfacing? A 1 MB RAM is made up of four 256 KB RAM's. Show its memory interfacing in 8086 microprocessor with the help of memory mapping table and interfacing diagram.
7. Write a program in 8086 to display numbers from 0 to 9 with line feed.
8. Differentiate between memory mapped I/O and Input-output mapped I/O.
9. List out the features and applications of RS-232 serial interface.
10. Write a program in 8085 to subtract the 2 digit decimal number (2nd number) stored in memory location 8DA2H from the 2 digit decimal number (1st number) stored in memory location 8DA1H. The result is stored in memory location 8DA3H. If the result is negative its ten's complement will be stored.
11. Differentiate between real address mode and PVAM used in 80286 microprocessor.
12. Write short notes on:
 - a. Privilege level
 - b. Interrupt priority

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