MADE EASY PUBLICATIONS

# POSTAL BOOK PACKAGE 2025

# CONTENTS

# ELECTRICAL ENGINEERING

**Objective Practice Sets**

## Microprocessors

# 1 CHAPTER
# Introduction to 8085 and its Functional Organisation

**Q.1** Microprocessor 8085 is the enhanced version of ____ with essentially the same construction set.
(a) 6800 (b) 68000
(c) 8080 (d) 8000

**Q.2** The data bus in 8080A / 8085 microprocessor is a group of
(a) eight bit bidirectional lines that are used to transfer 8 bits data between the microprocessor and its I/O and memory
(b) eight lines used to transfer data among the registers
(c) eight unidirectional lines that are used for I/O devices
(d) sixteen bidirectional lines that are used for data transfer between the microprocessor and memory

**Q.3** **Assertion (A):** The development of a microprocessor based product requires the design of program and the hardware.
**Reason (R):** The design effort for an electronic product follows the same basic steps used in the development of software.
(a) Both A and R are true and R is the correct explanation of A
(b) Both A and R are true but R is NOT the correct explanation of A
(c) A is true but R is false
(d) A is false but R is true

**Q.4** The output data lines of microprocessors and memories are usually tristated, because
(a) More than one device can transmit information over the data bus by enabling only one device at a time
(b) More than one device can transmit information over the data bus at the same time
(c) The data lines can be multiplexed for both input and output
(d) It increases the speed of data transfers over the data bus

**Q.5** Machine instructions are written using which of the following?
(a) Bits 0 and 1 only
(b) Digits 0 to 9 only
(c) Digits 0 to 9 and the capital alphabets A to Z only
(d) Digits 0 to 9, the capital alphabets A to Z and certain special characters

**Q.6** **Assertion (A):** Many programmes prefer assembly level programming to machine language programming.
**Reason (R):** It is possible to efficiently utilise the hardware of the computer in machine language programming.
(a) Both A and R are true, and R is the correct explanation of A.
(b) Both A and R are true, but R is not a correct explanation of A.
(c) A is true, but R is false.
(d) A is false, but R is true.

**Q.7** Which one of the following statements is correct? A microcontroller differs from a microprocessor in that it has
(a) both on-chip memory and on-chip ports.
(b) only on-chip memory but not on-chip ports.
(c) only on-chip ports but not on-chip memory.
(d) neither on-chip memory nor on-chip ports.

**Q.8** What is the function of a program counter in an 8-bit microprocessor?
(a) To store the op-code of the instruction being executed
(b) To store the op-code of the next instruction
(c) To store the address of the instruction being executed
(d) To store the address of the next instruction

**Q.9** When an application is designed using a microcontroller it has the following advantages over a design based on a microprocessor :

## Answers Introduction to 8085 and its Functional Organisation

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1. (c) | 2. (a) | 3. (b) | 4. (a) | 5. (a) | 6. (a) | 7. (a) | 8. (d) | 9. (a) |
| 10. (c) | 11. (d) | 12. (b) | 13. (c) | 14. (a) | 15. (b) | 16. (c) | 17. (a) | 18. (a) |
| 19. (a) | 20. (b) | 21. (a) | 22. (d) | 23. (b) | 24. (a) | 25. (c) | 26. (b) | 27. (19) |
| 28. (7) | 29. (400) | 30. (36) | | | | | | |

## Explanations Introduction to 8085 and its Functional Organisation

**1. (c)**

8085 is advanced version of Intel 8080.

**2. (a)**

Data bus is of 8-bits and bidirectional and transfer data between microprocessor and memory/IO.

**4. (a)**

The output data lines of microprocessor and memories are tristate because more than one device can transmit information over the data bus by enabling only one device at a time.

**5. (a)**

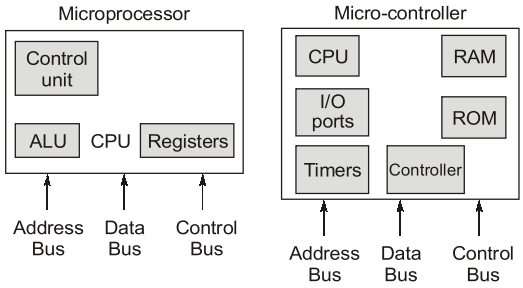
A programme written with 0's and 1's is called machine language programme. However sometime to facilitate programmer, machine code can be written in hexadecimal numbers.

**6. (a)**

Assembly language programmes are written in mnemonics with word like ADD for addition. It is convenient and easy as compared to machine language written in binary codes or in hexadecimal. Machine language is faster as it is the language of microprocessor. It is written in is 1's and 0's e.g. in 8085 to add contents of register *A* and register *B*, binary code is 10000000. So, time and resources required for conversion of assembly language into machine code is saved. Hence it uses hardware efficiently.

**7. (a)**

Microcontroller has on-chip memory as well as on chip ports.




**8. (d)**

It is used to store 16-bit address of the next byte to be fetched from memory or address of the next instruction to be executed.

**9. (a)**

A microcontroller is an embedded system with some specific functions like vending machine, electronic parking meters. The processor has to perform simple and low grade computational functions. So the process is simple and cheaper. Its chip count i.e. number of chips circuitry is less. A microcontroller is put into function once and the system where it is used is rugged. No changes or complexities are required. It is immune to virus attacks. So it is more to be fault tolerant.

**10. (c)**

An 'Assembler' is used for translation of a program from assembly language to machine language.

**11. (d)**

Control bus have some lines into microprocessor and some out of microprocessor.

**12. (b)**

A program written in assembly language is translated into machine language. Number of instructions in assembly and machine language is same.

**13. (c)**

READY is an active high pin used to interface slow peripheral devices with 8085.

**14. (a)**

Stack pointer is of 16-bit register and it points to the stack memory locations and generally used in case of interrupt or PUSH, POP instructions.