POSTAL Book Package 2023

Electrical Engineering

Objective Practice Sets

Microprocessors

Contents

MADE EASY Publications

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 bidirectional lines that are used to transfer 8 bits 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 :

Q.28 Three devices A, B and C are connected to an Intel 8085 A microprocessor. Device A has the highest priority and device C has the lowest priority. The correct assignment of interrupt inputs is

(a) A uses RST 5.5, B uses RST 6.5 and C uses TRAP
(b) A uses RST 5.5, B uses RST 6.5 and C uses RST 7.5
(c) A uses TRAP, B uses RST 6.5 and C uses RST 5.5
(d) A uses TRAP, B uses RST 5.5 and C uses RST 7.5

Q.29 An 8085 μp based system drives a multiplexed 5-digits 7-segment display. The digits are refreshed at a rate of 500 Hz. The ON time for each digit is

(a) 4 ms (b) 0.4 ms
(c) 10 ms (d) 25 ms

Q.30 A memory chip can be represented as 8192 × 32. If there are *p* number of address lines and *q* number of data lines for the memory chip, then *q*-*p* will be equal to _____.

Q.31 In 8085 microprocessor, RST-*n* instruction is executed. If the vector address location corresponding to the RST-*n* instruction is 0038 H, then the value of n is _____.

Q.32 An 8085 microprocessor is using a crystal frequency of 5 MHz. The duration of one T-state would be _____ ns.

Q.33 In 8085 microprocessor, the interrupt which is both edge as well as level sensitive has vector address of $(\_\_\_\_\_)_{10}$.

■■■■

Answers Introduction to 8085 and its Functional Organisation

1. (c)	**2.** (a)	**3.** (b)	**4.** (a)	**5.** (a)	**6.** (b)	**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.** (d)	**21.** (d)	**22.** (d)	**23.** (b)	**24.** (a)	**25.** (d)	**26.** (b)	**27.** (a)
28. (c)	**29.** (b)	**30.** (19)	**31.** (7)	**32.** (400)	**33.** (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.

3. (b)

Assertion (A): Microprocessor development requires the design of program and hardware.
Reason (R): Electronic product also follows the same basic steps used in software development.
Both A and R are correct but R is NOT the correct explanation of A.

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. (b)

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.