

# [Question Bank]

LAB:

MICROPROCESSOR AND ITS APPLICATIONS

Code: ECE-353

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Subject Teacher:

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Semester V<sup>th</sup>

**This booklet Includes:**

- List of Equipments
- List of Softwares
- List of Experiments
- lab Manual
- Question Bank

## ECE 353 MICROPROCESSOR AND ITS APPLICATIONS LAB

## Quiz Questions with Answers

**1. What are the various registers in 8085?**

**Ans:** - Accumulator register, Temporary register, Instruction register, Stack Pointer, Program Counter are the various registers in 8085 .

**2. In 8085 name the 16 bit registers?**

**Ans:-** Stack pointer and Program counter all have 16 bits.

**3. What are the various flags used in 8085?**

**Ans:-** Sign flag, Zero flag, Auxillary flag, Parity flag, Carry flag.

**4. What is Stack Pointer?**

**Ans:-** Stack pointer is a special purpose 16-bit register in the Microprocessor, which holds the address of the top of the stack.

**5. What is Program counter?**

**Ans:-** Program counter holds the address of either the first byte of the next instruction to be fetched for execution or the address of the next byte of a multi byte instruction, which has not been completely fetched. In both the cases it gets incremented automatically one by one as the instruction bytes get fetched. Also Program register keeps the address of the next instruction.

**6. Which Stack is used in 8085?**

**Ans:-** LIFO (Last In First Out) stack is used in 8085. In this type of Stack the last stored information can be retrieved first.

**7. What happens when HLT instruction is executed in processor?**

**Ans:-** The Micro Processor enters into Halt-State and the buses are tri-stated.

**8. What is meant by a bus?**

**Ans:-** A bus is a group of conducting lines that carries data, address, & control signals.

**9. What is Tri-state logic?**

**Ans:-** Three Logic Levels are used and they are High, Low, High impedance state. The high and low are normal logic levels & high impedance state is electrical open circuit conditions. Tri-state logic has a third line called enable line.

**10. Give an example of one address microprocessor?**

**Ans:-** 8085 is a one address microprocessor.

**11. In what way interrupts are classified in 8085?**

**Ans:-** In 8085 the interrupts are classified as Hardware and Software interrupts.

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**12. What are Hardware interrupts?**

Ans:- TRAP, RST7.5, RST6.5, RST5.5, INTR.

**13. What are Software interrupts?**

Ans:- RST0, RST1, RST2, RST3, RST4, RST5, RST6, RST7.

**14. Which interrupt has the highest priority?**

Ans:- TRAP has the highest priority.

**15. Name 5 different addressing modes?**

Ans:- Immediate, Direct, Register, Register indirect, Implied addressing modes.

**16. How many interrupts are there in 8085?**

Ans:- There are 12 interrupts in 8085.

**17. What is clock frequency for 8085?**

Ans:- 3 MHz is the maximum clock frequency for 8085.

**18. What is the RST for the TRAP?**

Ans:- RST 4.5 is called as TRAP.

**19. In 8085 which is called as High order / Low order Register?**

Ans:- Flag is called as Low order register & Accumulator is called as High order Register.

**20. What are input & output devices?**

Ans:- Keyboards, Floppy disk are the examples of input devices. Printer, LED / LCD display, CRT Monitor are the examples of output devices.

**21. Can an RC circuit be used as clock source for 8085?**

Ans:- Yes, it can be used, if an accurate clock frequency is not required. Also, the component cost is low compared to LC or Crystal.

**22. Why crystal is a preferred clock source?**

Ans:- Because of high stability, large Q (Quality Factor) & the frequency that doesn't drift with aging. Crystal is used as a clock source most of the times.

**23. Which interrupt is not level-sensitive in 8085?**

Ans:- RST 7.5 is a raising edge-triggering interrupt.

**24. What does Quality factor mean?**

Ans:- The Quality factor is also defined, as Q. So it is a number, which reflects the lossiness of a circuit. Higher the Q, the lower are the losses.

**25. What are level-triggering interrupt?**

Ans:- RST 6.5 & RST 5.5 are level-triggering interrupts.

**26. What is meant by Maskable interrupts?**

Ans:- An interrupt that can be turned off by the programmer is known as Maskable interrupt.

**27. What is Non-Maskable interrupts?**

Ans:- An interrupt which can be never be turned off (ie.disabled) is known as Non-Maskable interrupt.

**28. Which interrupts are generally used for critical events?**

Ans:- Non-Maskable interrupts are used in critical events. Such as Power failure, Emergency, Shut off etc.,

**29. Give examples for Maskable interrupts?**

Ans:- RST 7.5, RST6.5, RST5.5 are Maskable interrupts

**30. Give example for Non-Maskable interrupts?**

Ans:- Trap is known as Non-Maskable interrupts, which is used in emergency condition.

**31. What is a Microprocessor?**

Ans:- Microprocessor is a CPU fabricated on a single chip, program-controlled device, which fetches the instructions from memory, decodes and executes the instructions.

**32. What are the basic units of a microprocessor ? •**

Ans:- The basic units or blocks of a microprocessor are ALU, an array of registers and control unit. microprocessor does not support floating-point operations.

**33. What is the difference between microprocessor and microcontroller?**

Ans:- In Microprocessor more op-codes, few bit handling instructions. But in Microcontroller: fewer op-codes, more bit handling Instructions, and also it is defined as a device that includes micro processor, memory, & input output signal lines on a single chip.

**34. What is Instruction Set? •**

Ans:- It is the set of the instructions that the Microprocessor can execute

**35. What is an instruction**

Ans:- An instruction is an order given to a computer processor by a computer program. At the lowest level, each instruction is a sequence of 0s and 1s that describes a physical operation the computer is to perform (such as "Add") and, depending on the particular instruction type, the specification of special storage areas called registers that may contain data to be used in carrying out the instruction, or the location in computer memory of data.



**36. What is Instruction cycle?**

Ans:- The sequence of operations that a processor has to carry out while executing the instruction is called Instruction cycle. Each instruction cycle of a processor indium consists of a number of machine cycles.

**37. Explain the function of CPU in Microprocessor**

Ans:- A microprocessor controls all functions of the CPU, or central processing unit, of a computer or other digital device. The microprocessor is programmed to give and receive instructions from other components of the device. The system can control everything from small devices such as calculators and mobile phones, to large automobiles.

**38 .Difference between "Shift" and "Rotate".**

Ans:- Shift and Rotate commands are used to convert a number to another form where some bits are shifted or rotated. • A rotate instruction is a closed loop instruction. That is, the data moved out at one end is put back in at the other end. • The shift instruction loses the data that is moved out of the last bit locations. • Basic difference between shift and rotate is shift command makes "fall of " bits at the end of the register. • Where rotate command makes "wrap around" at the end of the register.

**39 What is the main use of ready pin?**

Ans:- READY is used by the microprocessor to check whether a peripheral is ready to accept or transfer data. • A peripheral may be a LCD display or analog to digital converter or any other. • These peripherals are connected to microprocessor using the READY pin. • If READY is high then the periphery is ready for data transfer. If not the microprocessor waits until READY goes high.

**40. What is the need for timing diagram?**

Ans:- The timing diagram provides information regarding the status of various signals, when a machine cycle is executed. The knowledge of timing diagram is essential for system designer to select matched peripheral devices like memories, latches, ports, etc., to form a microprocessor system.

**41. Why status signals are provided in microprocessor?**

Ans:- The status signals can be used by the system designer to track the internal operations of the processor. Also, it can be used for memory expansion (by providing separate memory banks for program & data and selecting the bank using status signals).

**42 what is the difference between MOV and MVI instruction.****43 what is the clock frequency of 8085 microprocessor.**

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- 45 Explain the functions of ALE pin.
- 46 what is the difference between one byte and two byte instructions
- 47 what is the difference between opcode and operand
- 48 what is the function of PSW
- 49 Mention the function of parity and sign flag.

