Viva questions of Microprocessor lab (8085 MP)

1. **What is microprocessor?**
   - the microprocessor is a clk driven semiconductor device consisting of electronic logic circuits by using LSI technique. It includes ALU, register arrays and control circuits on single chip.
   - CPU on single chip is called microprocessor
2. **What is the difference between microprocessor and microcontroller?**
   - CPU on single chip is called MP and if CPU is replaced by microprocessor in computer then it calls microcomputer
   - Microcomputer on a single chip is called microcontroller
   - Microcontroller includes MP, memory and I/O signal lines on a single chip, fabricated using VLSI
3. **How many data lines and address lines are in 8085 microprocessor?**
   8 data lines and 16 address lines.
4. **How much memory can be accessed by 8085?** 64 KB
5. **What is the use of ALE pin of 8085?**
   A positive going pulse on ALE line indicates that the bits on AD_7 — AD_0 are address bits. This signal is utilized to handle the low order address from the multiplexed bus and make a separate set of eight address lines.
6. **Name GPR.:** General purpose register (B,C,D,E,H,L)
7. **Define PC?**PC means program counter it is a 16 bit register it hold the address of next executing instruction
8. **Define SP:** Stack pointer is used as a memory pointer for the stack. Its 16 bit registers.
9. **Addressing modes of 8085.**
10. **Types of instructions of 8085.**
11. **What is the use of S_0 and S_1 pins of 8085?**
    The bit combination on these lines indicates the status of the microprocessor.
12. **What is the use of READY pin of 8085?**
    Microprocessor waits until the signal on this line is high to access data from a peripheral device. This is used to delay the microprocessor Read or Write cycles until a slow peripheral device is ready to access the data.
13. **Give examples of one byte, two byte and three byte instructions.**
    One byte instruction: MOV B, C
    Two byte instruction: MVI A, 33
    Three byte instruction: LXI H, 4302H

14. Give an example each for data transfer, arithmetic, logical, branch and machine control instructions.

Data transfer: MOV A, B
Arithmetic: ADD A
Logical: ORA B
Branch: JMP 4127H
Machine control: HLT

15. What is the TRAP? Address?

It is a non-maskable hardware interrupt. It has the highest priority among all interrupts. This interrupt is utilized to service very urgent requests such as power supply failure. It is also known as RST 4.5.

16. PSW of 8085?

17. How many machine cycles required for LDA 2050?

Word size =3

Machine cycle=4 (FRRR)

Number of T state=13

18. How many status flags in 8085?

5 flags: CF, AC, SF, PF, ZF

19. What is subroutine?

20. What is the addressing mode of LDAX: Indirect addressing modes

21. What is the difference between memory mapped I/O and I/O mapped I/O?

In memory mapped I/O, the address of I/O devices is in the address map of 8085 and the I/O devices are accessed by the instructions STA and LDA. In I/O mapped I/O, 8 - bit address is used to address the I/O devices. The instructions IN and OUT are used to access the I/O devices in this type.

22. How many I/O devices can be connected to the system with I/O mapped I/O? Why?

256 input ports and 256 output ports. The operand of IN and OUT instruction is 8 bit.

23. Which are the important interfacing chips of a microprocessor?

8255: Programmable peripheral interface
8253: Programmable interval timer

8251: Programmable communication interface (USART-Universal synchronous/asynchronous receiver/transmitter)
8279: Programmable keyboard/display interface
8259: Programmable interrupt controller

24. How many memory locations can be addressed by 14 address lines?

16 k

25. Explain PUSH and POP

26. Explain CALL and Return