Yashwantrao Chavan College of Science, Karad

Question Bank

Paper- VI

DSC -C10: Introduction to Microprocessor 8085 and Microcontroller 8051

Question Bank

Q. Select most correct alternative:

1) Microcomputer system is built using--------

   a) Microprocessor b) Memory c) Input-Output Devices d) all of these

2) …….is/are the example/s of ROM.

   a) EPROM b) MASK c) EEPROM d) all of these

3) Memory IC 2764 is of ---------Byte

   a) 2K b) 4K c) 8 K d) 16 K

4) To interface IC 2764 with 8085, it requires -----address lines.

   a) 11 b) 12 c) 13 d) 14

5) Memory IC 27128 is of ---------Byte

   a) 2K b) 4K c) 8 K d) 16 K

6) To interface IC 27128 with 8085, it requires -----address lines.

   a) 11 b) 12 c) 13 d) 14

7) _____ memory is erased by ultraviolet light radiation.

   i) PROM ii) Flash EPROM iii) EEPROM iv) EPROM

8) Memory capacity of IC 2764 is of _____ byte

   i) 2K ii) 4K iii) 8K iv) 16K

9) One Time Programmable ROM is_____

   i) Flash EPROM ii) PROM iii) EEPROM iv) EPROM

10) _____ memory is the non-volatile memory.

i) PROM ii) SRAM iii) DRAM iv) none of these

11) To interface memory IC 2764 to 8085, it requires _____ address lines.

i) 11 ii) 12 iii) 13 iv) 14

12) ------ register is used to indicate status of the result in 8085 microprocessor.

i) ACC ii) Flag iii) PC iv) SP

13) To de-multiplex the bus AD_0-AD_7 in 8085 _____signal is used.

i) RESET IN ii) S0 iii) ALE iv) HOLD 14)

8085 can access maximum _____bytes of memory.

i) 32 K ii) 64K iii) 8K iv) 4K

15) The size of data bus in 8085 is _____ bit.

i) 4 ii) 8 iii) 12 iv) 16

16) _____is 16 bit register.

i) ACC ii) B iii) PC iv) H

17) _____is a memory pointer register.

i) ACC ii) B iii) Flag iv) PC

18) 8085μp is ------- bit microprocessor.

a) 4 b) 8 c) 16 d) 32

19) Operating frequency of 8085μp is -------MHz

a) 1 b) 2 c) 3 d) 4

20) ------ technology is used to fabricate 8085μp.

a) NMOS b) CMOS c) HMOS d) TTL

21) ------ register is used to indicate status of the result.

a) ACC b) Flag c) PC d) SP

22) ------is a 16 bit register.

a) ACC b) Flag c) PC d) B

23) ----- is a memory pointer register.

a) ACC b) Flag c) PC d) B

24) ------ signal is used to Demultiplexing AD0-AD7.

a) RESET IN b) ALE c) S0, S1 d) IO/M

25) 8085 microprocessor can access ------- bytes of memory.

a) 8 K b) 16K c) 32K d) 64K

26) 8085 microprocessor has ----- bit data bus.

a) 4 b) 8 c) 16 d) 32

27) To communicate with slower memories ------- signal is used.

a) RESET IN b) ALE c) READY d) HOLD

28) Stack memory is initialized using ------ instruction.

a) LXI H, xxxxH b) LXI SP, xxxxH c) PUSH B d) POP B

29) ------are 16-bit registers.

a) PC and ACC b) SP and ACC c) PC and SP d) ACC and B

30) ------is not be an Interrupt signal.

a) INTR b) RST 7.5 c) RST 5.5 d) HOLD

31) Principal register in 8085 microprocessor is------

a) ACC b) Flag c) PC d) SP

32) -------registers can be acts as inputs for ALU.

a) ACC and B b) B and C c) PC and SP d) ACC and Temp Register

33) -------registers are not user accessible.

a) ACC and B b) B and C c) PC and SP d) W and Z

34) 8085 microprocessor has ------number of General purpose registers.

a) 4 b) 6 c) 8 d) 10

35) To clear the contents of accumulator, the instruction used is/are_____

i) SUB A ii) XRA A iii) MVI A, 00H iv) All of these

36) When subroutine is called the address of instruction following the CALL instruction is stored in the _____

i) Stack Pointer ii)Instruction Register iii)Program counter iv)Stack memory

37) The addressing mode of instruction MVI A, 05H is_____

i) Direct addressing ii) Immediate addressing iii) Register indirect addressing iv) Implicit

38) _____instruction is used to store the contents of registers on Stack.

i) JMP ii) MOV iii) PUSH iv) POP 39) LXI H, 5555H is a _____ byte instruction.

i) one ii) two iii) three iv) four

40) The addressing mode of RLC instruction is _____

i) register ii) register indirect iii) direct iv) implicit

41) If register A = 58H, after execution of instruction ANI, 0FH the content of accumulator will be_____

i) 05H ii) 0FH iii) 5FH iv) 08H

42) LDA, 5020H is _____ byte instruction.

i) four ii) three iii) two iv) one

43) To call a subroutine unconditionally_____ instruction is used.

i) JMP ii) JNZ iii) CALL iv) CZ

44) Maskable interrupts can be disabled using_____ instruction.

i) ORI ii) RIM iii) EI iv) DI 45) MVI B, 50H is _____ byte instruction.

i) four ii) three iii) two iv) one 46)

MOV A, B is a/an _____ byte instruction.

i) one ii) two iii) three iv) four

47) The addressing mode of MOV A, M instruction is _____

i) register ii) register indirect iii) direct iv) implicit

48) If register A = 98H, after execution of instruction ANI, F0H the content of accumulator will be_____

i) 09H ii) 98H iii) 08H iv) 90H

49) If register A = 28H, after execution of instruction ANI, 0FH the content of accumulator will be_____

a) 20H b) 0FH c) 2FH d) 08H

50) To clear the contents of accumulator, the instruction used is/are_____

i) SUB A ii) XRA A iii) MVI A, 00H iv) all of these 51) To call a subroutine unconditionally_____ instruction is used.

i) JNZ ii) JMP iii) CZ iv) CALL

52) _____instruction is used to store the contents of registers on Stack.

i) JMP ii) MOV iii) PUSH iv) POP

53) To call a subroutine conditionally ----------instruction is used.

a) JMP b) CZ c) CALL D) RET

54) The addressing mode of instruction JMP, 2005H is_____

i) Direct addressing ii) Immediate addressing

iii) Register indirect addressing iv) Implicit

55) 8051 has ----------number of 8- bit I/O ports

i) 4 ii) 8 iii) 16 iv) 32

56) 8051 has ---------- number of 16 bit timers.

i) 4 ii) 8 iii) 16 iv) 2

57) The 8051 has_____I/O port pins.

i) 4 ii) 8 iii) 16 iv) 32

58) _____ register in 8051 has no address.

i) ACC ii) B iii) DPTR iv) PC

59) The 8052has _____bytes of on-chip ROM.

i) 0 K ii) 4 K iii) 8K iv) 256 K

60) 8051 has _____numbers of Register Banks.

i) 2 ii) 4 iii) 8 iv) 32

61) 8051 microcontroller has ----------pins

a) 20 b) 40 c) 80 d) 16

62) DPTR is a ------- bit register

a) 8 b) 16 c) 64K d) 2K

63) 8051 has ----------Bytes of internal memory space

a) 128 b) 16 c) 64K d) 2K

64) 8051 is a ----------bit microcontroller

a) 8 b) 16 c) 64 d) 2

65) To access the external memory ----------pin s used

a) EA/Vpp b) PSEN c) ALE/PROG d) Vcc

66) 8051 has ----------number of I/O 8 bit ports

a) 8 b) 32 c) 4 d) 1

67) 8051 has ---------- number of 16 bit timers.

a) 8 b) 32 c) 2 d) 1

68) 8051 has ---------- number of register banks .

a) 8 b) 4 c) 2 d) 1

69) 8051 has built internal ---------of ROM.

a) 8KB b) 4KB c) 2KB d) 1KB

70) 8051 has built internal ---------of RAM.

a) 0 bytes b) 256 bytes c) 128 bytes d) 4 KB

Short answer questions (5 marks)

1. Write a note on EPROM and EEPROM.
2. Mention various types of semiconductor memories. Explain any one of these.
3. Mention various types of semiconductor memories**.** Explain RAMs.
4. Explain in brief Evolution of the Microprocessors.
5. Draw a block diagram of Microcomputer system.
6. Draw and explain interfacing diagram of EPROM 2764 to 8085 microprocessor and find its memory map.
7. Explain various types of ROMs used in microcomputer system.
8. Give any four features of 8085 Microprocessor.
9. Explain Flag register of 8085 Microprocessor.
10. Explain ALU and ACC of 8085 Microprocessor.
11. Explain Stack and Stack pointer register.
12. Explain 8085 programmable registers.
13. Explain various buses of 8085 Microprocessor.
14. Give in tabular form the basic machine cycles of 8085 Microprocessor.
15. Give a brief account of 8085 Microprocessor interrupts.
16. Explain RD, WR, ALE and IO/M signals.
17. Explain any four Data transfer instructions.
18. Explain any four Logical instructions.
19. What is the difference between JMP and CALL instruction?
20. Explain the CMP and CPI instruction with the flag status.
21. Explain the following instructions ANA B and ANI B.
22. Write an ALP (Assembly Language Program) to add two 8 bit numbers. The numbers are stored 6000 and 6001H memory location. Store the result at 6002H memory location after addition.
23. Write an ALP (Assembly Language Program) to subtract two 8 bit numbers. The numbers are stored 6000 and 6001H memory location. Store the result at 6002H memory location after subtraction.

24. Explain CALL and RET instructions.
25. Explain how the CALL and RET instructions are used in calling a subroutine.
26. Differentiate between JMP and CALL instructions.
27. Explain the difference between microprocessor and microcontroller.
28. Give any four features of 8051microcontroller.
29. Mention any eight applications of 8051microcontroller.
30. Give overview of 8051 family.
31. Explain the PSW register of 8051microcontroller.
32. Explain any four SFRs of 8051microcontroller.
33. Write a short note on stack and stack pointer.

Long answer questions (10 Marks)

1. Draw a block diagram of Microcomputer system and explain its various parts.
2. What are semiconductor memories? Explain them.
3. Draw the neat schematic showing the interface between 8085 microprocessor and2764 EPROM. Also explain memory map indicating the address and range.
4. Draw the neat schematic showing the interface between 8085 microprocessor and 27128 EPROM. Also explain memory map indicating the address and range.
5. Interface 27128 EPROM chip to 8085 microprocessor and explain its memory map.
6. How 2764 EPROM chip is interfaced to 8085 microprocessor? Find its memory map.
7. Draw an internal architecture of 8085 Microprocessor and explain its various blocks.
8. Draw the functional block diagram of 8085 microprocessor and describe its various blocks.
9. Draw an internal architecture of 8085 Microprocessorand explain its programmable registers.
10. Draw an internal architecture of 8085 Microprocessorand explain its Status and Control signals.
11. Draw an internal architecture of 8085 Microprocessorand explain its Status and Control signals.
12. Draw the signal diagram of 8085 Microprocessor and explain various signals.
13. Draw the pin diagram of 8085 Microprocessor and explain various signals. 14. Explain ADD, ADC B, DAD B, ADD M instruction with proper example.
15. Explain the different addressing modes with examples.
16. Discuss different types of addressing modes used in 8085 microprocessor with two examples of each.

17. Classify the instructions set of 8085 microprocessor according to its various operations and explain them with two suitable examples of each.
18. Classify the instruction set according to byte size/word size and explain them with three suitable examples of each.
19. Explain the one, two and three byte instructions with proper two examples of each.
20. Explain ADD, ADC B, DAD B, ADD M instruction with proper examples.
21. Explain eight logical instructions of 8085.
22. Explain the conditional CALL instructions with proper instructions.
    Write an ALP(Assembly Language Program) to divide two 8-bit numbers. Thenumbers are stored 6000 and 6001H memory location. Store the result at 6002Hmemory location after division.
23. Write an ALP(Assembly Language Program) to multiply two8-bit numbers. Thenumbers are stored 6000 and 6001H memory location. Store the result at 6002H memory location after multiplication.
24. Write an ALP(Assembly Language Program) to transfer a block of data from 6000H and store it at 8000H. copy 10 number of bytes in sequential manner.
25. Draw the pin diagram of 8051microcontroller and explain its various pins.
26. Draw and explain block diagram / architecture of 8051.
27. Draw and explain the RAM and ROM structure/organization of 8051.
28. Draw the block diagram / architecture of 8051 and explain the RAM structure/organization.
29. Differentiate microprocessor and microcontroller. Explain in detail the internal memory organization of 8051 Microcontroller.