MSMF GATE CENTRE

01. Determine the content of address bus during the 3rd machine cycle in the execution of the XTHL instruction.   3800: LXI SP A000$_H$
                                                                 3803 : XTHL
   (A) 3803$_H$ (b) 9FFF$_H$ (c) A000$_H$ (d) A001$_H$

02. What is the function of the following program?
       MOV   B, A
       MVI   C, 00
       LXI   SP, FFFF
       PUSH B
       POP   PSW
       HLT
   (a) Both ACC and flag register are cleared (b) ACC, flag register unaffected
   (c) Only flag register is cleared   (d) Only ACC is cleared

04. Which of the following interrupts require the external hardware for its functioning?
   (a) TRAP   (b) RST 7.5   (c) RST 5.5   (d) INTR

05. Which of the following interrupts in Edge Sensitive?
    (a) RST 7.5   (b) RST 6.5   (c) RST 5.5   (d) INTR

06. RIM
   MOV   B, A
   ANI   20H
   The function of the above program is
    (a) To receive serial input list   (b) To check the masking status of interrupts
    (c) To check RST 6.5 is pending   (d) To disable interrupts

07. Given SP = 0000H what are the contents of SP after PUSH instruction
   (a) 000 1H   (b) 0002H   (c) FFFF H   (d) FFFEH

08. The following program subtracts the contents of DE reg pair from the contents of BC reg   pair. Determine the instruction to be substituted in the vacant place.
       MOV   A, C
       SUB   E
       MOV   C, A
       MOV   A, B
       MOV   B, A
   (a) SUB E   (b) SBB E   (c) SBB D   (d) SUB D

09. What is the function of the following program, if B and C regs contain BCD numbers
       MVI   A,   99
       SUB   C
       ADI   01
       ADD   B
       DAA
       HLT
   (a) BCD subtraction   (b) BCD to Binary conversion
   (c) Binary to BCD conversion   (d) BCD Adder

10. What are the flags affected when DAD rp instruction is executed
   (a) Sign   (b) Parity   (c) Carry   (d) None

11. Which of the following can be used to shift 16 bit value in HL towards left by one bit
   (a) ADD R   (b) DAD H   (c) RAL   (d) None
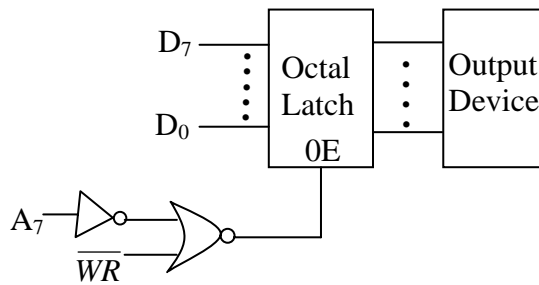
12. Which of the following instructions is used for serial input
    (a) SIM   (b) RIM   (c) MOV A, M   (d) None
13. What is the content of ACC after executing the following instructions
    015C : XRA A
    015D : CALL 0160
    0160 : INR A
    0161 : RET
    (a) A = 01_H (b) A = 02_H (c) A = 00_H (d) None
14. In a microprocessor, XOR (P,Q) is defined as $P \oplus Q \rightarrow P$. What is the function of the following program.
    XOR (r_1 , r_2)
    XOR (r_2 , r_1)
    XOR (r_1 , r_2)
    (a) r_1 , r_2 values are cleared   (b) r_1 swaps its values with r_2
    (c) r_2 value is transferred to r_1 (d) r_1 value is transferred to r_2
15. A computer uses 16 address lines and has a word length of 24 bits. The available memory IC's have 10 address and 8 data lines. Determine the number of such memory IC's required for the computer.
    (a) 256   (b) 192   (c) 128   (d) 64
16. In which mode the arithmetic (or) logical operations can be performed directly with the I/O data.   (a) I/O mapped I/O mode   (b) Memory mapped I/O mode
    (c) Both I/O and memory mapped I/O   (d) None of the above
17. What is the purpose of the following instructions?
    LXI   SP, A000H
    LXI   H, 0000H
    DAD   SP
    DCX   H
    SHLD $EFFF_H$
    (a) 00 is stored at $F000_H$, $EFFF_H$ (b) 00, AO_H is stored at 9FFF, 9FFE
    (c) 9F, Ff is stored at EFFF, F000   (d) FF, 9F is stored EFFF and $F000_H$
18. How long the pulse at the INTR interrupt pin should be high to be recognized by the μp
    (a) 2 T states   (b) 17.5T states   (c) 6 T states   (d) 18 T states
19. Calculate the time period between two consecutive MEMW signals, if the clock frequency is 2 MHz.
                       (T – states)
    Start : LDA   FFF9H   13   (4, 3, 3, 3)
           STA   FFF8H   13   (4, 3, 3, 3)
           MOV B, A   04   (4)
           JMP   Start   10   (4, 3, 3)
    (a) 10 μ sec   (b) 20 μ sec   (c) 5 μ sec   (d) 25 μ sec
20. Determine the contents of accumulator at the end of execution of the following program
                              opcode
    38 A0 :   LX1 H, 38A0   21, A0, 38
    38 A3 :   MOV A, M   7 E
    38 A4 :   INX H   23
    38 A5 :   ADD M   86
    (a) $C 1_H$ (b) $A 0_H$ (c) $D 8_H$ (d) 21_H

21. Which of the following indicate the address of the output device shown below.

(a) 7 F$_H$

(b) 83$_H$

(c) 65$_H$

(d) 45$_H$

22. Which of the following instructions is an example for register indirect addressing mode.

(a) MOV A, C   (b) INR M   (c) LDA 3800   (d) LXI H, 3800

23. What is the equivalent instruction of "OUT 8 bit address" in memory mapped I/$_o$ mode.

(a) MOV M,R   (b) LDA 16 bit address   (c) STA 16 bit address   (d) ADD M

24. A Register contains a binary number 110100. Which of the following will result in a register value of 111010.

(a) RRC, RAR, RLC   (b) RRC, RLC, RAL   (c) RAR, RLC, RAL   (d) RAR, RRC, RLC

25. How many times the following loop will be executed

        XRA A

        LXI B, 0002$_H$

  Loop : DCX B

        JNZ Loop

(a) 1   (b) Infinite   (c) 2   (d) 0

26.   MVI A, 3 A H

      MVI B, F 2 H

      ADD B

      DAD

      HLT.

What are the contents of ACC after executing the above program.

(a) 74$_H$ (b) 52$_H$ (c) 92$_H$ (d) None

27. Which of the following instructions clear the accumulator

(a) XRA A   (b) SUB A   (c) MVI A, 00   (d) All

28. Which of the following instruction is called ad 1-byte unconditional jump instruction

(a) XTHL   (b) SPHL   (c) RST n   (d) PCHL

29. After executing the XTHL instruction, what is the position of the stack pointer

(a) Decremented by 2   (b) Incremented by 2

(c) Undisturbed   (d) Stack is not involved.

30. Determine the contents of Accumulator and Cy flag after executing the following instructions.

      MVI A, AA

      ORI FF

      RRC

      RRC

      CMC

      INRA

(a) FF, 1   (b) FF, O   (c) OO, 0   (d) OO, 1

KEY FOR MP& MC

01. d   02. c   03. T   04. d   05. a   06. c   07. d   08. c   09. a   10. c   11. b   12. B   13. B   14. b   15. B

16. b   17. D   18. B   19. B   20. a   21. b   22. b   23. c   24. B   25. d   26. c   27. D   28. d   29. C   30. c