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BTECH 3RD YEAR

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Class Test 1.

Ans 1; Given the code

MVI B, E7H   // B = E7H
MOV A, B   // A = E7H
STA XX75H   // Memory at XX75H = E7H
HLT

Here, B contains Hex value E7H.
Then, its moved to A.
    Thus, A has E7H.
  Then, it is stored at memory location XX75H.
        Hence, Memory location XX75H has E7H.

Ans 2: Given the code,

MVI C, FFH   // C = FFH
LXI H, XX70H   // HL = XX70H
LXI D, XX70H   // DE = XX70H
MOV. M, C   // Location XX70H = FFH
LDAX D   // A = FFH.
HLT

Hence, after executing code,
    A = FFH   H = XX H
    B = 00H   L = 70 H
    C = FFH
    D = XX H
    E = 70 H

Ans 3: Given the code,

```
        LXI B, 0007H
LOOP :  DCX B
        MOV A, B
        ORA C
        JNZ LOOP
```

The loop will run 7 times.
This is because it will run until the value of B and C are both 0.

Ans 4:

a) Given the code,

```
MVI  A, D5H    //A=D5H
ORA  A         //A = A
RAL            //CY=1 // A= A<<1
RRC            //CY=0 // A =A>>1
```

After executing the code,
A = 55 H
CY = 0

b) Given the code,

```
MVI  A, B7H    //A = B7H
ORA  A         //A = A
RAR            //CY=1 //A=A>>1
RAL            //CY=0 // A = A<<1
```

After executing the code
A = B7H
CY = 0

Ans 5: Given the code,

```
MVI  A, 75H        // A = 75H (0111 0101)
ANI  F0H           // A = 75H AND F0H = 70H
RRC                // A = A >> 1
RRC                // A = A >> 1
RRC                // A = A >> 1
RRC                // A = A >> 1.
```

Here, the function of the program is to find the value at 10's place in the given BCD number.

Hence Here, A = 75 (BCD)

Digit at 10's place ~~and A = 0~~ $\underline{A = 7}$.

Ans 6: Given the code,

```
MVI  A, 05H        // A = 05H
RLC                // A = A * 2 = 2 x Initial val
MOV  B, A          // B = 2 * Initial val
RLC                // A = 4 * Initial Val
RLC                // A = 8 * Initial Val
ADD  B             // A = 10 * Initial Val.
```

Here, the code is ~~d~~ used to multiply given the value in Accumulator by 10.

Hence, A = 10 * Initial Value from start ~~in Hex~~

A = 32 H.

Ans 7: Given the code,

DATA (H) 21, 63, 9F, C7, D2, FF

```
          IN PORT1        //loads value from PORT1 to A
          MVI B, 20H      // B=20H
          CMP B           // Compares B with accumulator
          JC REJECT       //Jumps to REJECT if carry
          JM REJECT       //Jumps to REJECT if minus
          STA 2070H
          JMP ACCEPT      //Reaches ACCEPT if no carry & no
                            minus.
REJECT:   JMP INVALID
```

ACCEPT is only reached if CARRY and MINUS flag are not set after comparing accumulator to B=20H.

Hence, the values that will reach ACCEPT are:-
21H (Greater than 20H)
63H (Greater than 20H)
9FH (Greater than 20H)
~~63H~~

Others are not selected as the subtraction resulted into ~~But~~ Accumulator wrap around and setting the MINUS Flag.