

MPMC 2.MARKS

1. There are 3 control flags in 8086 microprocessor and these are:

Directional Flag (D) – This flag is specifically used in string instructions. ...

Interrupt Flag (I) – This flag is for interrupts. ...

Trap Flag (T) – This flag is used for on-chip debugging.

2. TYPE 0 interrupt represents division by zero situation.

TYPE 1 interrupt represents single-step execution during the debugging of a program.

TYPE 2 interrupt represents non-maskable NMI interrupt.

TYPE 3 interrupt represents break-point interrupt.

TYPE 4 interrupt represents overflow interrupt.

3. The 8086 does not have on-chip clock generation circuit. Hence the clock generator chip, 8284 is connected to the CLK pin of 8086. The clock signal supplied by 8284 is divided by three for internal use. The maximum internal clock frequency of 8086 is 5 MHz.

4. MN/MX' : Minimum/Maximum. This pin signal indicates what mode the processor will operate in. RQ'/GT1', RQ'/GT0' : Request/Grant. These pins are used by local bus masters used to force the microprocessor to release the local bus at the end of the microprocessor's current bus cycle

5. TTL serial signals exist between a microcontroller's voltage supply range - usually 0V to 3.3V or 5V. A signal at the VCC level (3.3V, 5V, etc.) indicates either an idle line, a bit of value 1, or a stop bit. A 0V (GND) signal represents either a start bit or a data bit of value 0.

6. Conversion time of an ADC is the time required by the ADC to perform a complete conversion process. The conversion is commonly started by a "strobe" or

synchronization signal, controlling the sampling rate.

7.

- Example : Write an 8051 C program to get bit P1.0 and send it to P2.7 after inverting it.

```
#include <reg51.h>
sbit inbit=P1^0;
sbit outbit=P2^7;
bit mbit;
void main(void)
{
    while (1)
    {
        mbit=inbit;           // get a bit from P1.0
        outbit=~mbit;         // invert it and send to P2.7
    }
}
```

8. 8051 Assembly 2's complement program

```
ORG 0000H
MOV DPTR, #0030H
MOVX A, @DPTR
CPL A
ADD A, #01H
MOV DPTR, #0090H
MOVX @DPTR, A
MOV PCON, #02H
```

9. Mode 0 is a synchronous communication system. Through the RxD pin is transmit data, while the sync pulses are located at TxD. For this mode, the transmission speed is fixed to the oscillator frequency ÷ 12. This communication system is typically used to expand the number of points of entry and exit by shift registers.

10.

19. What are the types of ADC chips available?

* ADC chips can be classified into two types. They are,

i. Parallel ADC chips

ii. Serial ADC chips

* In parallel ADC chips there are 8 or more pins dedicated to bring out the binary data where serial ADC chip, only one pin for data out.

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