

Name : Kalani Katan Giyan

Semester : 5

Subject : Microprocessor.

Seat No : CS5A021

pg. No : 1/6 OF Q2

sign : K.G. Kalani

E) Real Mode

Protected Mode

- | | |
|--|---|
| i. In this mode processor works as 8088/8086. | In this processor works in full capacity. |
| ii. This mode has only 1 MB memory addressing capability. | This mode has more than 1 MB to few GB memory addressing capability. |
| iii. This mode handles only one task at a time. | This mode handles multiple tasks at time. |
| iv. In this memory address, translation not required. | In this memory address translation required. |
| v. In this mode processor or computer directly communicate with ports and devices. | In this mode processor communicate with ports and devices through OS. |
| vi. This mode is not supported memory management. | This mode supports memory management. |
| vii. This mode supports less addressing modes and instructions. | This mode supports more addressing modes and instructions. |

pg. No :- 2/6. of Q2. sign - k-mulaw.

| F) | Stage. | Description. |
|----|-----------------------|--|
| | Prefetch. | Identical to integer prefetch stage |
| | Instruction Decode 1 | Identical to integer D1 stage. |
| | Instruction Decode 2 | Identical to integer D2 |
| | Execution stage (Ex) | Register, load, memory read or memory write performed as required by instruction |
| | FP Execution 1 stage. | Information from register or memory is written into FP registers. Data is converted to floating point format before being loaded into floating point unit. |
| | FP execution 2 stage. | Floating point operation performed within floating point unit |
| | write FP result. | Floating point results are rounded and result is written to target floating point register |
| | Error reporting | If an error is detected an error reporting stage is entered where the error is reported and FPU status word is updated. |

Pg. No. : 3/6. of Q2. Sign: K. G. Kalaw

B) In order to control the organisation of program and provide necessary information to assembler to understand the assembly language programs to generate necessary machine codes the assembly directives are used.

i) An assembler supports directives to define data, to organise segments to control procedure to define macros.

ii) Various types of assembler directives of 8086 are.

a) The DB directive

The DB directive is used to declare a BYTE - 2-BYTE variable.

a byte is made up of 8 bits

eg: Byte 1 DB 10h.

Byte 2 DB 255, 0FFh (max possible for byte)

b) The DW directive

the DW directive is used to declare a word type variable.

A word occupies 16 bits of (2 Byte)

eg: WORD DW 1234h.

0FFFh - max possible for a word.

P.T.O.

pg. No :- 4/6. of Q2 sign :- I.C.G. KalauD

c) The DD directive.

The DD directive is used to declare Dword
A Dword is double word It is made up
of 32 bits i.e 2 words or 4 bytes

eg: Dword1 DW 12345678h
max possible \rightarrow 0FFFFFFFFh.

d) STRUCT and ENDS directives.

They are used to define a structure
template of grouping data items

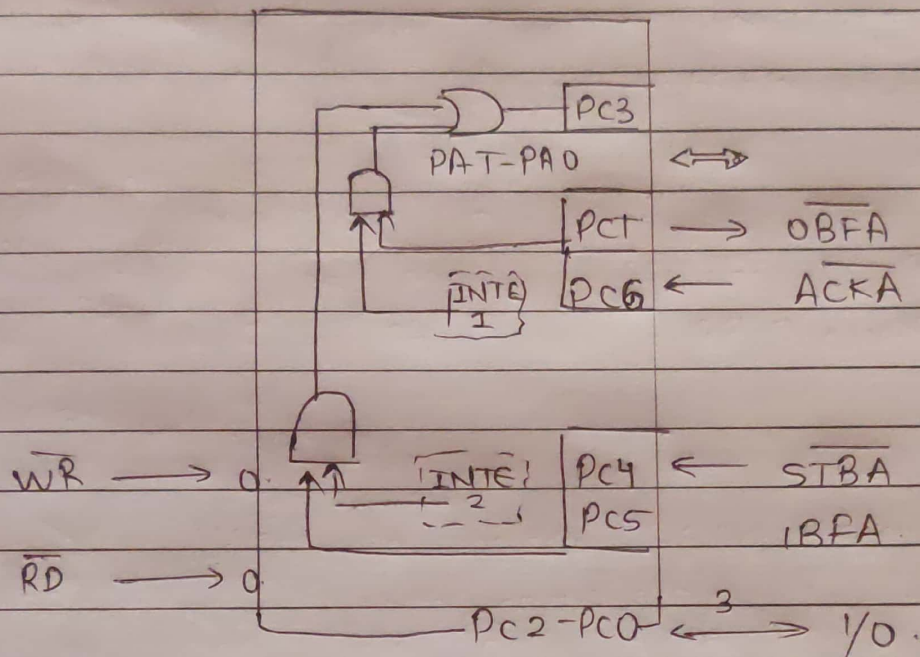
e) SEGMENT

It is used to indicate start of logical
segment. It is the name given to segment.

~~REDO~~

Page : 5/6 of Q2. Sign E.G. Kabir.

D) Mode 2 of 8255 (bidirectional handshake I/O)



Control word.

| D7 | D6 | D5 | D4 | D3 | D2 | D1 | D0 |
|----|----|----|----|----|-----|-----|-----|
| 1 | 1 | X | X | X | I/O | I/O | I/O |

LD PC2-PC0.

1 = input

0 = output.

Port B.

1 = input.

0 = output.

Group B mode

0 = mode 0

1 = Mode 1.

Page 6/6. of 42. Sign - E.G. (alant).

Working:- Port A is used as 8-bit bidirectional handshake I/O port. Port A requires 5 signals from Port C for doing bidirectional handshake.

Port B has following options.

- i. Use remaining 3 lines of port C for handshaking so that port B is model. These Port C lines will be completely used for handshaking.

OR.

Port B works in modes 0 as simple I/O. In this case the remaining 5 lines of port C can be used for data transfer.

Port A can be used for data transfer between two computers as shown. The high speed computer is known master and rest as slave.

For Input -

STB and IBI \rightarrow handshaking signals

INTR \rightarrow Interrupt signals

For output:-

OBF and Ack \rightarrow handshaking signals

INTR \rightarrow Interrupt signal.

Thus 5 signals from port C are

STB, IBI, INTR, OBF, Ack.