

1 processors. Instruction register

- why the unit named 'instruction register' might be needed?

2 processors. File registers

- in which terms the benefits of using 'file registers' might be?

3 processors. Decode and control unit

- why the name of the unit 'decode and control unit' has the word 'control' in it?

4 processors. Program counter

- instructions which might change the content of the program counter how they might be called?

5 processors

- does it seem that all instructions need to use the arithmetic and logic unit?
- which unit, or which units, seems to be involved in the execution of all instructions?

6 processors. Program counter

- in general, what is the relationship between the width of the program counter and the maximum capacity of the program memory?

7 processors. Instructions

- in general, how the number of supported instructions might influence the length of instructions?
- in general, how the number of file registers might influence the length of instructions?

8 instructions set. Number of operands

- in general, how the number of operands in instructions might influence the length of instructions?

9 instructions set. Data memory and program memory

- how the length of instructions might affect the maximum addressable range of program memory?
- how the length of instructions might affect the maximum addressable range of data memory?

10 instructions set. Data memory and program memory

- how to increase the maximum addressable range of the data memory ?
- how to increase the maximum addressable range of the program memory?

11 instructions set. Length of instructions

- what might be the implications of having instructions, in an instructions set, which have different length?

12 microcontroller. Block diagram

- in regard to the microcontroller PIC16F84A, in regard to the block diagram, try to identify the building blocks which their role seem to be known to you
- which blocks seem to be unknown to you?

a document related to the said microcontroller might be found at the following web link

<http://ww1.microchip.com/downloads/en/DeviceDoc/35007b.pdf>