**Discussion 3**

1. **A programmer puts the first instruction at address 100H. What happens when the microcontroller is powered up?**
2. **Show the lowest and highest values (in hex) that the PIC18 program counter can take.**
3. **The design of PIC18 follows ­­­\_\_\_\_\_\_\_\_\_\_\_\_ architecture. What are the properties of this architecture?**
4. What are the widths of the address bus and data bus of PIC18 program memory? How many memory locations can be addressed by the program memory address bus?
5. What are the widths of the address bus and data bus of PIC18 data memory? How many memory locations can be addressed by the data memory address bus?
6. Most instructions allocate only 8 bits to address the data memory, whereas the width of the address bus of PIC18 data memory is more than 8 bits. How can these instructions uniquely specify where operands and destination of an arithmetic/logic operation are located in the memory?

7. Which of the following is (are illegal?

|  |  |  |
| --- | --- | --- |
| (a) MOVLW 500 | (b) MOVLW 50 | (c) MOVLW 00 |
| (d) MOVLW 255H | (e) MOVLW 25H | (f) MOVLW F5H |
| (g) MOVLW mybyte, 50H |  |  |

8. Which of the following is (are illegal)?

|  |  |  |
| --- | --- | --- |
| (a) ADDLW 500 | (b) MOVLW 50 | (c) MOVLW 00 |
| (d) ADDLW 255H | (e) MOVLW 0x12 | (f) MOVLW 0F5H |
| (g) ADDWL 25H |  |  |

9. What is result of the following code and where is it kopt

MOVLW 25H

ADDLW 0x1F

10. What is result of the following code and where is it kopt

MOVLW 15H

ADDLW 0xEA

11. The largest number that K can take for the instruction ADDLW K is \_\_\_\_\_\_\_\_\_

12. We have many WREG registers in the PIC!8.

13. Data RAM in PIC is called file register

14. The SFRs are part of the file register memory space

15. The general purpose RAM is not part of the file register memory space.

16. What is the address range fir scratch pad section of access bank?

0-7FH

17. Show a simple code to load values 30H and 97H into locations 5 and 6, respectively.

18. Show a simple code to load value 15H into location 7, and then add to WREG five times and place the result in WREG as the values are added. WREG should be zero before the addition starts.

19. **What is the difference between MOVWF and MOVF instruction?**

**MOVWF copies the contents of WREG to a location in the file register.**

**20. What is the difference between MOVFF and MOVWF?**

**MOVWF copies the contents of WREG to a location in the file register.**