

Study Questions (Chapter 03 – Part 3)

1. What is the main function of the *program counter*, and how it differs from the *location counter*?
2. What is the main function of the *location counter*, and how it differs from the *program counter*?
3. What does the term *word aligned address* mean?
4. What does the term *half-word aligned address* mean?
5. Consider the following program.
Edit lines L1, L2, L3, L4, L5, L6, and L7, by adding any combinations of data definition directives, i.e., DCD, DCW, DCB, SPACE, and ALIGN.

Manually calculate the values of r1, r2, r3, r4, r5, r6, and r7.

Assemble and run the program to verify your answer.

```
        AREA data_definitions, CODE, READONLY

        ENTRY
        ADR r1, L1
        ADR r2, L2
        ADR r3, L3
        ADR r4, L4
        ADR r5, L5
        ADR r6, L6
        ADR r7, L7
loop B   loop

L1      .....
L2      .....
L3      .....
L4      .....
L5      .....
L6      .....
L7      .....

        END
```