9608/42/PRE/O/N/20

Last update: Anuj Verma, 03:16 PM 06/10/2020

# TASK 1.1

Write assembly language program code that allows a user to input 5 characters. The characters are not stored.

|  |  |  |  |
| --- | --- | --- | --- |
| **Label** | **Op code** | **Operand** | **Comment** |
|  | LDM | #0 | // initialise COUNT to 0 |
|  | STO | COUNT |
| LOOP: | IN |  | // input character |
|  | LDD | COUNT | // increment COUNT |
|  | INC | ACC |
|  | STO | COUNT |
|  | CMP | MAX | // is COUNT = MAX ? |
|  | JPN | LOOP | // jump to LOOP if FALSE |
|  | END |  | // end program |
| MAX: | 5 | |  |
| COUNT: |  | |  |

# TASK 1.3

Write assembly language program code that adds the values stored in four consecutive memory locations starting at NUMBER using the Index Register.

Store the final total value in memory location TOTAL.

|  |  |  |  |
| --- | --- | --- | --- |
| **Label** | **Op code** | **Operand** | **Comment** |
|  | LDR | #0 | // initialise Index Register to 0 |
| LOOP: | LDX | NUMBER | // // load value from NUMBER + contents of Index Register |
|  | ADD | TOTAL | // add value to TOTAL |
|  | STO | TOTAL |
|  | INC | IX | // increment Index Register |
|  | LDD | COUNT | // increment COUNT |
|  | INC | ACC |
|  | STO | COUNT |
|  | CMP | MAX | // is COUNT = MAX ? |
|  | JPN | LOOP | // jump to LOOP if FALSE |
|  | END |  | // end program |
| MAX: | 4 | |  |
| COUNT: | 0 | |  |
| NUMBER: | 23 | |  |
|  | 17 | |  |
|  | 38 | |  |
|  | 13 | |  |
| TOTAL: | 0 | |  |