```
        .text                   // executable code follows
        .global _start

_start: MOV R5, #0
        MOV R4, #TEST_NUM   // Load data
M_LOOP: LDR R1, [R4]        // Load word into R1
        CMP R1, #0          // Check if 0
        BEQ END             // End if 0
        BL ONES             // Else use ones subroutine
        CMP R0, R5          // Check if new val is larger
        MOVGT R5, R0        // If it is store it in r5
        ADD R4, #4          // Move to next word
        B M_LOOP

ONES:   MOV R0, #0          // R0 will hold the result
O_LOOP: CMP R1, #0          // Loop until the data contains no more 1's
        BEQ O_END
        LSR R2, R1, #1      // Perform SHIFT, followed by AND
        AND R1, R1, R2
        ADD R0, #1          // Count the string length so far
        B O_LOOP
O_END:  MOV PC, LR

END:    B END

TEST_NUM: .word 0x103fe00f
          .word 0x420b1a23
          .word 0x11111111
          .word 0x00000003
          .word 0x00000001
          .word 0xffffffff
          .word 0x12345678
          .word 0x9abcdef0
          .word 0x42042069
          .word 0xfedcba98
          .word 0x00000000
          .end
```