

EE461 Microprocessor-based Digital Design

High Level

Assignment 10

1. Q 5.17

```
COUNT      equ    h'20'
TEMP       equ    h'21'
STATUS     equ    03
C          equ    0
Z          equ    2

BIT_COUNT  clrf   COUNT    ; Zero the count
           movwf  TEMP     ; Put the number in TEMP

BIT_LOOP   bcf    STATUS,C ; Clear Carry flag
           rrf    TEMP,f   ; Shift the number right into
Carry bit
           btfsc  STATUS,C ; IF Carry is zero THEN don't
increment
           incf  COUNT,f   ; ELSE record one more one
; Test shifted number for zero by moving it out and in
of TEMP!
           movf  TEMP,f    ; Moving the shifted number
in and out of
           btfss  STATUS,Z ; IF Zero flag set THEN exit
loop
           goto  BIT_LOOP ; ELSE do another shift and
increment

; Outcome is in File h'20' (COUNT)

           btfss  h'20',0  ; IF bit 0 is set THEN
already odd ones
           bsf   h'20',7   ; ELSE set the bit 7 (which
is zero)
           ....  ....
```

2. Convert Q Program 9.1 to assembly.

Converted in chapter 9 following the assembly.

