1. Given the following PIC18 assembler listing, show the final contents of the Stack and
Stack Pointer after the execution of the third subroutine call.

```
------------------------------------------------
PIC ASSEMBLER LISTING
Address Opcode  Instruction
------------------------------------------------

000084  EC51    START:    CALL       UNPACK
000086  F000
000088  EC59              CALL       OUTLED
00008A  F000
00008C  0E05              MOVLW      D'5'


0000A2  5000    UNPACK:   MOVF       COUNTER,W
0000A4  0B0F              ANDLW      0x0F

0000AE  3A02              SWAPF      BCD1,F
0000B0  0012              RETURN


0000B2  5001    OUTLED:   MOVF       BCD0,W
0000B4  EC64              CALL       GETCODE
0000B6  F000
0000B8  CFF5              MOVFF      TABLAT,PORTC


0000C8  6E03    GETCODE:  MOVWF      TEMP
0000CA  0E00              MOVLW      UPPER LEDCODE
```

2. Modify the BCDBIN subroutine (IP8-1) to use a separate subroutine UNPACK.

  a) Draw flowcharts for the subroutines (and indicate any registers used).
  b) Write the assembly language for the subroutines and simulate using sample data.
  c) Your solution should include the assembler listing and an annotated screen capture of
the simulator showing the final register values.