1. Write an algorithm and C code which asks the user to enter their marital status, corresponding to a letter input. (nested if)

married = 'm'

single = 's'

divorced = 'd'

widowed = 'w'

When the user enters the letter, their corresponding status should be printed to the screen. If the user enters anything other than *m*,*s*,*d*, or *w* the message "Invalid Code" should be printed.

1. Write an algorithm and C code that inputs a series of 10 numbers, and determines and prints the largest of the numbers.

Your program should use three variables as follows

**counter:** A counter to count to 10 (i.e., to keep track of how many numbers have been input and to determine when all 10 numbers have been processed)

**number:** The current number input to the program

**largest:** The largest number found so far

1. Write a C code to calculate and display the following summation value :

Sum = 9 + 11 + 13 + …………+ 57 + 59

A)With For

B)With While

|  |  |
| --- | --- |
| $3001 to $3500 | *Gross pa*y\*0.14 |
| Above $3500 | *Gross pa*y\*0.18 |

1. **Write down the algorithm ( Flowchart and Pseudocode ) and C Code to calculate the quiz average of N student.**

**For**  solution

|  |  |
| --- | --- |
| Set 0 to sum  Input N  FOR cnt 🡨1; cnt<=N;cnt🡨cnt+1  input quiz  sum🡨sum+quiz  ENDFOR  Avg🡨sum / N  Display avg |  |

**While** Solution

|  |  |
| --- | --- |
| Set 0 to sum  Input N  Set 1 to cnt  WHILE cnt<=N  input quiz  sum🡨sum+quiz  cnt🡨cnt+1  ENDWHILE  avg🡨sum / N  display avg |  |

1. Trace the following pseudocodes and then convert them to C code

|  |  |
| --- | --- |
| a)  Set 0 to i  Set 0 to x  DO  IF i mod 5 is equal to 0  x🡨 x + 1  display x  ENDIF  i🡨 i +1  WHILE i is <= 20  display x | b)  Set 0 to i  Set 0 to x  FOR i🡨1; i<10;i🡨i + 1  IF i mod 2 is equal to 1  x🡨x+1  ELSE  x🡨x - 1  ENDIF  Display x  ENDFOR |

1. Convert the following pseudocode to C code

Set s1 to 10

Set s2 to 100

Set cnt to 2

WHILE cnt is less than 5

Calculate cnt\*cnt\*cnt and set it to a

Add a to s1

Calculate cnt\*cnt and subtract from s2

Calculate s1+s2 and set it to sum

Display sum

Increase cnt by 1

ENDWHILE

Tracetable :

s1 s2 cnt a sum

~~10~~ ~~100~~ ~~2~~ ~~?~~ ~~?~~

~~18~~ ~~96~~ ~~3~~ ~~8~~ ~~114~~

~~45~~ ~~87~~ ~~4~~  ~~27~~ ~~132~~

109 71 5 64 180

Output :

114

132

180