**Assignment 1**

**Problem Solving Using C**

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**Solution 1**  
'3.15' - Invalid (one character)

35,550 - Invalid (comma)

3.25e2 - Valid

2e-3 - Valid

'eLearning - Invalid (one character)

"show" - Invalid (one character)

'Quest' - Invalid (one character)

2^3 - Invalid (^ not allowed)

4 6 5 2 - Invalid (space)

**Solution 2**  
B'day - Invalid (because of ‘)

Int - Invalid (int is a keyword)

$hello - Invalid (start with alphabet or \_)

#HASH - Invalid (start with alphabet or \_)

dot. - Invalid (. Is not allowed)

Number - Valid

totalArea - Valid

\_main() - Valid

temp\_in\_Deg - Valid

total% - Invalid (% not allowed)

1st - Invalid (start with alphabet or \_)

stack-queue - Invalid (- not allowed)

variable name - Invalid (space is not allowed)

%name% - Invalid (% not allowed and should start with alphabet or underscore)

Salary - Valid

**Solution 3**

(a) C language was developed by Richard Stallman***True***  
(b) Operating systems like Windows, Linux, UNIX and Android are written in C and assembly language *True*  
(c) C language programs can easily interact with hardware of a PC / Laptop, they are quick to access and respond very quick under less memory. *True*  
(d) A real constant in C can be expressed in both Fractional and Exponential forms. *True*  
(e) A character variable can at a time store only one character. *True*  
(f) The maximum value that an integer constant can have varies from one compiler to another. *True*  
(g) Usually all C statements are written in small case letters. *True*  
(h) Spaces may be inserted between two words in a C statement. *True*  
(i) Spaces cannot be present within a variable name. *True*  
(j) C programs are converted into machine language with the help of a program called Editor. *False*  
(k) Most development environments provide an Editor to type a C program and a Compiler to convert it into machine language. *True*  
(L) int, charm float, real, integer, character, main, printf, and scanf all are keywords. *False*

**Solution 4**

(a) \n Escape sequence

(b) 3.145 Real constant

(c) -6513 Integer constant

(d) ’D’ Character constant

(e) 4.25e-3 Exponential form

(f) main( ) Function

(g) %f, %d, %c Format specifier

(h) ; Statement terminator

(i) Constant Literal

(j) Variable Identifier

(k) & Address of operator

(l) printf( ) Output function

(m) scanf( ) Input function

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**Solution 5**

#include <stdio.h>

int main()

{

    float fah, cent;

    printf("\nEnter The temperature in Fahrenheit(fah):");

    scanf("%f",&fah);

    cent = 5.0/9.0\*(fah-32);

    printf("\nEnter The temperature in Centigrade(cent): %f",cent);

    return 0;

}

**Solution 6**

#include <stdio.h>

int main(){

    int old\_lenghth, old\_breadth;

    int new\_length, new\_breadth;

    old\_lenghth = 1200;

    old\_breadth = 850;

    printf("\nDimension of A0 = %d X %d", old\_lenghth, old\_breadth);

    for(int i=1;i<9;i++){

        new\_length=old\_breadth;

        new\_breadth=old\_lenghth/2;

        printf("\nDimension of A%d = %d X %d", i, new\_length, new\_breadth);

        old\_lenghth=new\_length;

        old\_breadth=new\_breadth;

    }

    return 0;

}

**Alter**

#include <stdio.h>

int main(){

    int A0h, A0w;

    int A1h, A1w;

    int A2h, A2w;

    int A3h, A3w;

    int A4h, A4w;

    int A5h, A5w;

    int A6h, A6w;

    int A7h, A7w;

    int A8h, A8w;

    A0h=1200;

    A0w=850;

    printf("\n Length of A0 = %d and breadth of A0 = %d", A0h, A0w);

    A1h=A0w;

    A1w=A0h/2;

    printf("\n Length of A1 = %d and breadth of A1 = %d", A1h, A1w);

    A2h=A1w;

    A2w=A1h/2;

    printf("\n Length of A2 = %d and breadth of A2 = %d", A2h, A2w);

    A3h=A2w;

    A3w=A2h/2;

    printf("\n Length of A3 = %d and breadth of A3 = %d", A3h, A3w);

    A4h=A3w;

    A4w=A3h/2;

    printf("\n Length of A4 = %d and breadth of A4 = %d", A4h, A4w);

    A5h=A4w;

    A5w=A4h/2;

    printf("\n Length of A5 = %d and breadth of A5 = %d", A5h, A5w);

    A6h=A5w;

    A6w=A5h/2;

    printf("\n Length of A6 = %d and breadth of A6 = %d", A6h, A6w);

    A7h=A6w;

    A7w=A6h/2;

    printf("\n Length of A7 = %d and breadth of A7 = %d", A7h, A7w);

    A8h=A7w;

    A8w=A7h/2;

    printf("\n Length of A8 = %d and breadth of A = %d", A8h, A8w);

    return 0;

}