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Assignment 1

Q1. Write a C program for calculating the price of a product after adding the sales tax to its original price. Where rate of tax and price is inputted by user.

```
#include<stdio.h>
#include<Math.h>
int main(){
    float rateoftax,price,salestax;
    printf("Rate of TAX= ");
    scanf("%f",&rateoftax);
    printf("\nPRICE= ");
    scanf("%f",&price);
    printf("Sales TAX=");
    salestax=price*(rateoftax/100);
    printf("%.1f",salestax);
    return 0;
}
```

OUTPUT

```
PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\" ; if ($?) { gcc
assignment1.c -o assignment1 } ; if ($?) { .\assignment1 }
Rate of TAX= 100

PRICE= 200
Sales TAX=200.00
```

Q2. Write a C program to calculate the weekly wages of an employee. The pay depends on wages per hour and number of hours worked. Moreover, if the employee has worked for more than 30 hours, then he or she gets twice the wages per hour, for every extra hour that he or she has worked.

```
#include<stdio.h>
#include<Math.h>
int main(){
    float hourlyWage,weeklyHours,weeklyWages;
    printf("Enter the hourly wage: ");
    scanf("%f", &hourlyWage);
    printf("Enter the number of hours worked in a week: ");
    scanf("%f", &weeklyHours);
    if (weeklyHours<=30) {
        weeklyWages=hourlyWage*weeklyHours;
    }
    else{
        weeklyWages=hourlyWage*30;
        weeklyWages+=(weeklyHours-30)*(2*hourlyWage);
    }
}
```

```

    }
    printf("Weekly wages=%.1f\n", weeklyWages);
    return 0;
}

```

OUTPUT

```

PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c\" ; if
($?) { gcc Q1.c -o Q1 } ; if ($?) { .\Q1 }

```

```

Enter the hourly wage: 6000
Enter the number of hours worked in a week: 32
Weekly wages=204000.0

```

Q.3 Mr. X goes to market for buying some fruits and vegetables. He is having a currency of Rs 500 with him for marketing. From a shop, he purchases 2.0 kg Apple priced Rs. 50.0 per kg, 1.5 kg Mango priced Rs.35.0 per kg, 2.5 kg Potato priced Rs.10.0 per kg, and 1.0 kg Tomato priced Rs.15 per kg. He gives the currency of Rs. 500 to the shopkeeper. Find out the amount shopkeeper will return to X by writing a C program.

```

#include <stdio.h>
int main() {
    float totalCost, amountPaid, amountReturned;
    float applePrice = 50.0, mangoPrice = 35.0, potatoPrice =
10.0, tomatoPrice = 15.0;
    float appleQty = 2.0, mangoQty = 1.5, potatoQty = 2.5, tomatoQty =
1.0;
    amountPaid = 500.0;
    totalCost=(applePrice*appleQty)+(mangoPrice*mangoQty)+(potatoPrice*
potatoQty)+(tomatoPrice*tomatoQty);
    amountReturned=amountPaid-totalCost;
    printf("Amount to be returned to Mr.X= Rs.%.1f\n", amountReturned);

    return 0;
}

```

OUTPUT

```

PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c\" ; if
($?) { gcc Q2.c -o Q2 } ; if ($?) { .\Q2 }
Amount to be returned to Mr.X= Rs.307.5

```

Q4. Write a C program to print your name, date of birth and mobile number in 3 different lines.

```

#include<stdio.h>
int main(){
    char name[100];
    int dateofbirth,date,month,year,i;
    char mobilenum[10];
    printf("enter your Details.\n");
    printf("Name= ");
    scanf("%s",&name);
    printf("enter Date,Month,Year for your date of birth= ");
    scanf("%d%d%d",&date,&month,&year);
    printf("enter Mobile number= ");
    scanf("%s",&mobilenum);
    printf("\n\nYour details are here.\n");
    printf("name=%s",name);
    printf("\nDate of Birth= %d|%d|%d\n",date,month,year);
    printf("mobile number=%s",mobilenum);
    return 0;
}

```

OUTPUT

```

PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c\" ; if
($?) { gcc q4.c -o
q4 } ; if ($?) { .\q4 }
enter your Details.
Name= saniya
enter Date,Month,Year for your date of birth= 23
3
2005
enter Mobile number= 345667777

Your details are here.
name=saniya
Date of Birth= 23|3|2005
mobile number=345667777

```

Q5. Write a program to read an integer, a character and a float value from keyboard and display the same in different lines on the screen.

```

#include <stdio.h>
int main() {
    int integerValue;
    char characterValue;
    float floatValue;
    printf("Enter an integer= ");
    scanf("%d",&integerValue);
    printf("Enter a character= ");
    scanf("%s",&characterValue);
}

```

```

printf("Enter a float value= ");
scanf("%f",&floatValue);
printf("Integer= %d\n",integerValue);
printf("Character= %c\n",characterValue);
printf("Float= %.2f\n",floatValue);
return 0;
}

```

OUTPUT

```

PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c\" ; if
($?) { gcc Q5.c -o
Q5 } ; if ($?) { .\Q5 }
Enter an integer= 5
Enter a character= a
Enter a float value= 23.4
Integer= 0
Character= a
Float= 23.40

```

Q6. Write a program to print the following line (Assume the total value is contained in a variable named cost)

The sales total is : \$ 172.53

```

#include<stdio.h>
int main(){
    float cost=172.53;
    printf("The sales total is: $ %f",cost);
    return 0;
}

```

OUTPUT

```

PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c\" ; if
($?) { gcc Q6.c -o Q6 } ; if ($?) { .\Q6 }
The sales total is: $ 172.529999

```

Q7. Raju got 6 and half apples from each of Raghu, Sheenu and Akash. He wants to know how many apples he has in total without adding them. Write a program which could help Raju in doing this.

```

#include<stdio.h>
int main(){
    float raghuapples=6.5;
    float Sheenuapples=6.5;
    float Akashapples=6.5;
    float Rajuapples;
    printf("Raju got apples from Raghu,Sheenu and Akash are ");
    Rajuapples=raghuapples+Sheenuapples+Akashapples;
}

```

```

printf("%.1f",Rajuapples);
return 0;
}

```

OUTPUT

```

PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c\" ; if
($?) { gcc Q7.c -o
Q7 } ; if ($?) { .\Q7 }
Raju got apples from Raghu,Sheenu and Akash are 19.5

```

Q8. Write a program that prints the floating point value in exponential format correct to two decimal places.

```

#include<stdio.h>
int main(){
    float num;
    printf("Number=");
    scanf("%f",&num);
    printf("Value in two decimal =%.2f\n",num);
    printf("value in expontenial form= %e",num);
    return 0;
}

```

OUTPUT

```

PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c\" ; if
($?) { gcc Q8.c -o Q8 } ; if ($?) { .\Q8 }
Number=45789.4586759
Value in two decimal =45789.46
value in expontenial form= 4.578946e+004

```

Q9. Write a program to input and print your mobile number (i.e. of 10 digits).

Q10. The population of a city is 30000. It increases by 20 % during first year and 30% during the second year. Write a program to find the population after two years?

```

#include<stdio.h>
int main(){
    int
    initialpop=30000,GR1styear=20,GR2ndyear=30,pop_1styear,pop_2ndyear;
    pop_1styear=initialpop+(initialpop*GR1styear/100);
    pop_2ndyear=pop_1styear+(pop_1styear*GR2ndyear/100);
    printf("Population after two years= %d",pop_2ndyear);
    return 0;
}

```

OUTPUT

```
PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c\" ; if
($?) { gcc Q10.c -o Q10 } ; if ($?) { .\Q10 }
Population after two years= 46800
```

Q11. Write a program to find the ASCII value of a character.

```
#include <stdio.h>
int main() {
    char c;
    printf("Enter a character= ");
    scanf("%c",&c);
    printf("ASCII value of %c = %d",c,c);
    return 0;
}
```

OUTPUT

```
PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c\" ; if
($?) { gcc Q11.c -o Q11 } ; if ($?) { .\Q11 }
Enter a character= a
ASCII value of a = 97
```

Q12. Write a program to calculate salary of an employee, given his basic pay (entered by user), HRA=15% of the basic pay and TA=20% of the basic pay.

```
#include<stdio.h>
int main(){
    float basicpay,hra,ta,totalsalary;
    printf("Basic pay= ");
    scanf("%f",&basicpay);
    hra=0.15*basicpay;
    ta=0.20*basicpay;
    totalsalary=basicpay+hra+ta;
    printf("Basic Pay= %.2f\n",basicpay);
    printf("HRA=%.2f\n",hra);
    printf("TA=%.2f\n",ta);
    printf("Total Salary=%.2f",totalsalary);
    return 0;
}
```

OUTPUT

```
PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c\" ; if
($?) { gcc Q12.c -o Q12 } ; if ($?) { .\Q12 }
Basic pay= 5000
```

```
Basic Pay= 5000.00
HRA=750.00
TA=1000.00
Total Salary=6750.00
```

Q13. Write a program to find the slope of a line and angle of inclination that passes through two points P and Q with coordinates (xp, yp) and (xq, yq) respectively.

Q14. The SPI (Semester Performance Index) is a weighted average of the grade points earned by a student in all the courses he registered for in a semester. If the grade points associated with the letter grades awarded to a student are g1, g2, g3,.....gk etc. and the corresponding credits are c1, c2, c3,.....ck, the SPI is given by:

$$SPI = \frac{\sum_{i=1}^k c_i g_i}{\sum_{i=1}^k c_i}$$

Where, k is the number of courses for which the candidate remains registered for during the semester/ trimester. Write a program in C to calculate SPI for k =5.

```
#include <stdio.h>
int main() {
    float g1,g2,g3,g4,g5,c1,c2,c3,c4,c5,spi;
    printf("Enter grade points and credits for 5 courses=\n");
    printf("Grade point and credits for first course= ");
    scanf("%f%f", &g1, &c1);
    printf("\nGrade point and credits for Second course= ");
    scanf("%f%f", &g2, &c2);
    printf("\nGrade point and credits for third course= ");
    scanf("%f%f", &g3, &c3);
    printf("\nGrade point and credits for fourth course= ");
    scanf("%f%f", &g4, &c4);
    printf("\nGrade point and credits for fifth course= ");
    scanf("%f%f", &g5, &c5);
    spi=(c1*g1+c2*g2+c3*g3+c4*g4+c5*g5)/(c1+c2+c3+c4+c5);
    printf("SPI for the semester= %.2f\n",spi);

    return 0;
}
```

OUTPUT

```
PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c\" ; if
($?) { gcc Q13.c -o Q13 } ; if ($?) { .\Q13 }
Enter grade points and credits for 5 courses=
Grade point and credits for first course= 23.3
45

Grade point and credits for Second course= 58
56
```



```
Grade point and credits for third course= 40
23
```

```
Grade point and credits for fourth course= 90
98
```

```
Grade point and credits for fifth course= 78
78
SPI for the semester= 67.07
```

Q 15. Write a program to calculate the frequency (f) of a given wave with wavelength (λ) and speed (c), where $c=\lambda*f$.

```
#include<stdio.h>
int main(){
float WL,S,F;
printf("Enter the wavelength (in meters)= ");
scanf("%f",&WL);
printf("Enter the speed of the wave (in meters per second)= ");
scanf("%f",&S);
F=S/WL;
printf("The frequency of the wave is %.2f Hz",F);
return 0;
}
```

OUTPUT

```
PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c\" ; if
($?) { gcc Q14.c -o Q14 } ; if ($?) { .\Q14 }
Enter the wavelength (in meters)= 50
Enter the speed of the wave (in meters per second)= 6.2
The frequency of the wave is 0.12 Hz
```

Q 16. A car travelling at 30 m/s accelerates steadily at 5 m/s² for a distance of 70 m. What is the final velocity of the car? [Hint: $v^2 = u^2 + 2as$]

```
#include <stdio.h>
#include <math.h>
int main() {
    double iV=30.0,A=5.0,d=70.0,fV;
    fV=sqrt(pow(iV,2)+2*A*d);
    printf("The final velocity of the car is %.2lf m/s\n",fV);
    return 0;
}
```

OUTPUT

```
PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c\" ; if
($?) { gcc Q15.c -o Q15 } ; if ($?) { .\Q15 }
The final velocity of the car is 40.00 m/s
```

Q 17. A horse accelerates steadily from rest at 4 m/s² for 3s. (a) What is its final velocity? (b) How far has it travelled? [Hint: (a) $v = u + at$ (b) $s = ut + \frac{1}{2}at^2$]

```
#include <stdio.h>
int main() {
    double iV=0,A=4,time=3,fV,d;
    fV=iV+(A*time);
    d=(iV*time)+(0.5*A*time*time);
    printf("Final velocity of the horse: %.2lf m/s\n",fV);
    printf("Distance traveled by the horse: %.2lf meters\n",d);
    return 0;
}
```

OUTPUT

```
PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c\" ; if
($?) { gcc Q16.c -o Q16 } ; if ($?) { .\Q16 }
Final velocity of the horse: 12.00 m/s
Distance traveled by the horse: 18.00 meters
```

Q 18. Write a program to find the sum of your four last digit of your university roll number .

```
#include<stdio.h>
int main(){
    int rollno,lfd,r,rev=0,sum=0;
    printf("Roll number = ");
    scanf("%d",&rollno);
    while(rollno!=4){
        r=rollno%10;
        rev=rev*10;
        rollno=rollno/10;
    }
    sum=sum+rev;
    printf("Sum of the last four digits of your roll number= %d",sum);
    return 0;
}
```

Q19. Write a program to initialize your height and weight in cm. and kgs respectively demonstrating compile time initialization and convert them in feet and pounds respectively. **Note :- 1 cm = 0.393701inch , 1 Kg = 2.20462**

Q 20 . Code the variable declarations for each of following:

- a) A character variable named option.
- b) An integer variable sum initialized to 0
- c) A floating point variable, product, initialized to 1

Answer:= a) *char[]*
 b) *int sum=0;*
 c) *float product=1.0;*

Q21. Write a program that reads nine integers. Display these numbers by printing three numbers in a line separated by commas.

```
#include <stdio.h>
int main() {
    int numbers[9],i;
    printf("Enter nine integers= \n");
    for(i=0;i<9;i++) {
        scanf("%d",&numbers[i]);
    }
    printf("Numbers in groups of three= \n");
    for (i=0;i<9;i++)
    {
        printf("%d",numbers[i]);
        if((i+1)%3==0)
        {
            printf(",\n");
        }
        else{
            printf(", ");
        }
    }
    return 0;
}
```

OUTPUT

```
PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c\" ; if
($?) { gcc Q21.c -o Q21 } ; if ($?) { .\Q21 }
Enter nine integers=
2
3
4
5
6
7
8
9
1
Numbers in groups of three=
2, 3, 4,
5, 6, 7,
```

8, 9, 1,

Q22. What are header files and what are its uses in C programming?

Q23. What will be the output of following program?

```
#include<stdio.h>
int main()
{ int num=070;
printf(“%d\t%o\t%x”,num,num,num);
}
```

Answer= 56 70 38

Q 24. What will be the output of following program?

```
#include <stdio.h>
void main()
{
int x = printf("GLA UNIVERSITY");
printf("%d", x);
}
```

Answer= GLA UNIVERSITY14

Q25. What are library functions? List any four library functions.

Q26. What will be the output of following program?

```
#include <stdio.h>
void main()
{
int x = printf("C is placement oriented Language") – printf(“Hi”);
printf("%d %o %x", x,x,x);
}
```

Answer=29 35 1d

Q27. What is the meaning of following statement?

```
printf(“%d”,scanf(“%d%d”,&a,&b));
```

Answer= It reads two integer values from the standard input and stores them in the variables a and b.

Q28. What will be the output of following program?

```
#include <stdio.h>
void main()
{
printf(" \nC %% FOR %% PLACEMENT\");
}
```

Answer= "C % FOR % PLACEMENT"

Q29. Suppose distance between GLA University and Delhi is m km (to be entered by user), by BUS you can reach Delhi in 4 hours. Develop a ‘C’ program to calculate speed of bus.

```
#include <stdio.h>

int main() {
```

```

double distance,speed;
double time=4.0;
printf("Enter the distance between GLA University and Delhi (in
kilometers)= ");
scanf("%lf", &distance);
speed=distance/time;
printf("The speed of the bus is %.2lf km/h\n", speed);
return 0;
}

```

OUTPUT:

```

PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c\" ; if
($?) { gcc Q29.c -o Q29 } ; if ($?) { .\Q29 }
Enter the distance between GLA University and Delhi (in kilometers)=
150
The speed of the bus is 37.50 km/h

```

Q30. In an exam Satyam got 50 marks, Suman got 70 marks and Shyam got 80 marks, Write a 'C' program to find average marks of these three participants

```

#include <stdio.h>
int main() {
    int
satyammarks=50,sumanmarks=70,shyammarks=80,numberofparticipants=3;
    float Avgmarks;
    int sumofmarks=satyammarks+sumanmarks+shyammarks;
    Avgmarks=sumofmarks/numberofparticipants;
    printf("Average marks of Satyam, Suman, and Shyam:
%.2f\n",Avgmarks);
    return 0;
}

```

OUTPUT:

```

PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c\" ; if
($?) { gcc Q30.c -o Q30 } ; if ($?) { .\Q30 }
Average marks of Satyam, Suman, and Shyam: 66.00

```

Q31. One day, Mohan called Saurav and Sajal and gave some money to them, later he realized that money that was given to Saurav should be given to Sajal and vice-versa. Develop a 'C' program to help Mohan so that he can rectify his mistake.

```

#include <stdio.h>
int main() {
    double sauravamount=100.0,sajalamount=150.0,temp;
    printf("Initial amounts=\n");
    printf("Saurav= %.2lf\n",sauravamount);
    printf("Sajal= %.2lf\n",sajalamount);
}

```

```

temp=sauravamount;
sauravamount=sajalamount;
sajalamount=temp;
printf("\nCorrected amounts=\n");
printf("Saurav= %.2lf\n",sauravamount);
printf("Saja= %.2lf\n",sajalamount);
return 0;
}

```

OUTPUT:

```

PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c\" ; if
($?) { gcc Q31.c -o Q31 } ; if ($?) { .\Q31 }
Initial amounts=
Saurav= 100.00
Sajal= 150.00

Corrected amounts=
Saurav= 150.00
Saja= 100.00

```

Q32. One day when I was going for a lunch, suddenly rain started, I was very hungry so started running with speed of 4km/h and it took 3 min to reach mess. Help me to develop a 'C' program to calculate distance travelled by me.

```

#include <stdio.h>
int main() {
    float speed_kmph = 4.0;
    float time_minutes = 3.0;
    float time_hours = time_minutes / 60.0;
    float distance_km = speed_kmph * time_hours;
    printf("Distance traveled: %.2f kilometers\n", distance_km);
    return 0;
}

```

OUTPUT:

```

PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c\" ; if
($?) { gcc Q32.c -o Q32 } ; if ($?) { .\Q32 }
Distance traveled: 0.20 kilometers

```

Q33. Can two or more escape sequences such as \n and \t be combined in a single line of program code?

```

Yes , we can use both the \n and \t together like:
#include <stdio.h>

```

```
int main() {
    printf("Hello,\n\tWorld!\n");
    return 0;
}
```

OUTPUT:

```
Hello,
    World!
```

Q34. What are comments and how do you insert it in a C program?

Q35. What is wrong in this statement? `scanf("%d",number);`

Answer= *in this line, Address(&) of variable number is not given to get a number from use.*

Q36. What will be the output?

```
#include <stdio.h>
int main()
{
    if (sizeof(int) > -1)
        printf("Yes");
    else
        printf("No");
    return 0;
}
```

Answer= *Yes*

Q37. Point out which of the following variable names are invalid:

gross-salary INTEREST , salary of emp , avg. , thereisbookinmysoup

Answer= *gross-salary ,salary of emp , avg.*

Q38. Tom works at an aquarium shop on Saturdays. One Saturday, when Tom gets to work, he is asked to clean a 175-gallon reef tank. His first job is to drain the tank. He puts a hose into the tank and starts a siphon. Tom wonders if the tank will finish draining before he leaves work. He measures the amount of water that is draining out and finds that 12.5 gallons drain out in 30 minutes. So, he figures that the rate is 25 gallons per hour. Develop a 'C' program to help Tom to calculate time required to completely clean tank.

```
#include <stdio.h>
int main() {
    double total_gallons = 175.0,rate = 25.0;
    double time_required = total_gallons / rate;
    int hours = (int)time_required;
    int minutes = (int)((time_required - hours) * 60);
```

```

    printf("Time required to completely clean the tank: %d hours %d
minutes\n", hours, minutes);
    return 0;
}

```

OUTPUT:

```

PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c\" ; if
($?) { gcc Q33.c -o Q33 } ; if ($?) { .\Q33 }
Time required to completely clean the tank: 7 hours 0 minutes

```

Q39. The percent y (in decimal form) of battery power remaining x hours after you turn on a laptop computer is $y = -0.2x + 1$. Develop a 'C' program to calculate after how many hours the battery power is at 75%?

```

#include <stdio.h>
int main() {
    double target_battery_power = 0.75,x;
    x = (1 - target_battery_power) / -0.2;
    printf("The battery power is at 75%% after %.2lf hours\n", x);
    return 0;
}

```

OUTPUT:

```

PS C:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c> cd
"c:\Users\Lenovo\Desktop\Saniya Gupta\arrange.c\assignment.c\" ; if
($?) { gcc Q39.c -o Q39 } ; if ($?) { .\Q39 }
The battery power is at 75% after -1.25 hours

```

Q40. Which of the following is used to convert the high level language in machine language in a single go?

- a. Compiler
- b. Interpreter
- c. Linker
- d. Assembler

Answer= a. Compiler

Q 41. What is the format specifier for an Octal Number?

- a. %0
- b. %d
- c. %o
- d. %e

Answer= %o

Q 42. Which format specifier is used to print the exponent value upto 2 decimal places.

- a. %e
- b. %.2f
- c. %f
- d. %.2e

Answer= %.2f

Q 43. Which of the following is not a basic data type?

- a. char
- b. array
- c. float

d. int

Answer= Array

Q 44. What is the output of following code?

```
#include<stdio.h>
void main()
{
    int x=0;
    x= printf("\"hello\b\"");
    printf("%d",x);
}
```

a. hello7 b. "hello"7 c. "hell"8 d. hell8

Answer= "hello"7

Q 45. What is the output of following code?

```
#include<stdio.h>
void main()
{
    int b,c=5 ;
    int("%d , %d", b,c);
}
```

a. 5, 5 b. 5, 5.000000
c. Garbage, 5.000000 d. Garbage, 5

Q46. Which of the following is an identifier?

a. &fact b. Basic_pay c. enum d. lsum

Answer=Basic_pay and enum

Q 47. What is the output of the following program?

```
#include<stdio.h>
void main()
{
    char x, a='c';
    x=printf("%c",a);
    printf("%d",x);
}
```

a. c1 b. cgarbage
c. 1 c. c

Answer=Cgarbage

Q48. Perform the following conversion from Decimal to other number as directed-

- a) $(365.55)_{10} = (?)_2$
- b) $(453.65)_{10} = (?)_8$
- c) $(5164.12)_{10} = (?)_{16}$
- d) $(23.65)_{10} = (?)_5$
- e) $(772)_{10} = (?)_7$

Answer=

- a) 101101101.100011
- b) 750.5146

- c) 14C.1A
- d) 43.31
- e) 2152

Q49. Covert the following numbers to decimal number system-

- a) $(325.54)_6 = (?)_{10}$
- b) $(1001010110101.1110101)_2 = (?)_{10}$
- c) $(742.72)_8 = (?)_{10}$
- d) $(AC94.C5)_{16} = (?)_{10}$

Answer=

- a) 125.9444
- b) 1109.8125
- c) 482.90625

Q50. Perform the following conversion from Hexadecimal to other number as directed-

$$(DB56.CD4)_{16} = (?)_2, (?)_8, (?)_4$$

Q51. Perform the following conversion from octal to other number as directed-

$$(473.42)_8 = (?)_2, (?)_{10}, (?)_{16}, (?)_5$$

Q52. Find the value of A?

- a) $(23)_{10} = (17)_A$
- b) $(21)_{16} = (41)_A$
- c) $(32)_8 = (101)_A$

Q53: What will be the output of following program? Assume integer is of 2 bytes

```
void main(){
int a=32770;
printf("%d",a);
}
```

Answer=32770

Q54: #include <stdio.h>

```
int main()
{
float c = 5.0;
printf("Temperature in Fahrenheit is %.2f", (9/5)*c + 32);
return 0;
}
```

Answer= 41.00

