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Section - AY

C programming Assignment.

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>
```

```
int main() {
```

```
    float originalPrice, taxRate, finalPrice;
```

```
    // Input the original price and tax rate
```

```
    printf("Enter the original price: ");
```

```
    scanf("%f", &originalPrice);
```

```
    printf("Enter the tax rate (in percentage): ");
```

```
    scanf("%f", &taxRate);
```

```

    // Calculate the final price
    finalPrice = originalPrice + (originalPrice * taxRate /
100);

    // Display the final price
    printf("The final price after adding %.2f%% tax is:
%.2f\n", taxRate, finalPrice);

    return 0;
}

```

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>

int main() {
    // Declare variables
    float wagesPerHour, hoursWorked, weeklyWages;
    // Input the wages per hour and hours worked
    printf("Enter the wages per hour: ");
    scanf("%f", &wagesPerHour);
    printf("Enter the number of hours worked: ");
}

```

```

scanf("%f", &hoursWorked);
// Calculate weekly wages
if (hoursWorked <= 30) {
    weeklyWages = wagesPerHour * hoursWorked;
} else {
    weeklyWages = (wagesPerHour * 30) +
(wagesPerHour * 2 * (hoursWorked - 30));
}
// Display the weekly wages
printf("The weekly wages of the employee is:
%.2f\n", weeklyWages);
return 0;
}

```

Q3.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() {  
    // Declare variables  
    float currencyWithMrX = 500.0;  
    float applePricePerKg = 50.0;  
    float mangoPricePerKg = 35.0;  
    float potatoPricePerKg = 10.0;  
    float tomatoPricePerKg = 15.0;  
    float totalAmountSpent;  
  
    // Calculate the total amount spent  
    float appleCost = 2.0 * applePricePerKg;  
    float mangoCost = 1.5 * mangoPricePerKg;  
    float potatoCost = 2.5 * potatoPricePerKg;  
    float tomatoCost = 1.0 * tomatoPricePerKg;  
    totalAmountSpent = appleCost + mangoCost +  
    potatoCost + tomatoCost;  
  
    // Calculate the amount to be returned  
    float amountToReturn = currencyWithMrX -  
    totalAmountSpent;  
  
    // Display the amount to be returned  
    printf("The shopkeeper will return Rs. %.2f to Mr.  
X\n", amountToReturn);  
    return 0;  
}
```

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

:

```
#include <stdio.h>
```

```
int main() {
```

```
    // Declare variables
```

```
    char name[] = "Your Name";
```

```
    char dateOfBirth[] = "Your Date of Birth";
```

```
    char mobileNumber[] = "Your Mobile Number";
```

```
    // Print name
```

```
    printf("Name: %s\n", name);
```

```
    // Print date of birth
```

```
    printf("Date of Birth: %s\n", dateOfBirth);
```

```
    // Print mobile number
```

```
    printf("Mobile Number: %s\n", mobileNumber);
```

```
    return 0;
```

```
}
```

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() {
```

```
    // Declare variables
```

```

int intValue;
char charValue;
float floatValue;
// Input an integer
printf("Enter an integer: ");
scanf("%d", &intValue);
// Input a character
printf("Enter a character: ");
scanf(" %c", &charValue); // Note the space before
%c to consume any newline characters.
// Input a float value
printf("Enter a float value: ");
scanf("%f", &floatValue);
// Display the values on separate lines
printf("Integer: %d\n", intValue);
printf("Character: %c\n", charValue);
printf("Float: %.2f\n", floatValue);
return 0;
}

```

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

:

```
#include <stdio.h>
```

```
int main() {  
    // Declare and initialize the cost variable  
    float cost = 100.50; // You can replace this with your  
    desired value  
    // Print the line with the cost variable embedded  
    printf("The total cost is: $%.2f\n", cost);  
    return 0;  
}
```

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() {  
    // Number of apples received from each person  
    float applesFromRaghu = 6.5;  
    float applesFromSheenu = 6.5;  
    float applesFromAkash = 6.5;  
    // Calculate the total number of apples without  
    adding them  
    float totalApples = applesFromRaghu +  
    applesFromSheenu + applesFromAkash;  
    // Display the total number of apples
```

```
printf("Raju has %.1f apples in total without adding  
them.\n", totalApples);  
return 0;  
}
```

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

```
:  
#include <stdio.h>  
int main() {  
    // Declare and initialize a floating-point value  
    float floatValue = 1234.56789;  
    // Print the floating-point value in exponential  
    format with two decimal places  
    printf("Value in exponential format: %.2e\n",  
floatValue);  
    return 0;  
}
```

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

```
:  
#include <stdio.h>  
int main() {  
    // Declare a variable to store the mobile number
```



```

long long int mobileNumber;
// Input the mobile number
printf("Enter your 10-digit mobile number: ");
scanf("%lld", &mobileNumber);
// Check if the mobile number has exactly 10 digits
if (mobileNumber >= 1000000000LL &&
mobileNumber <= 9999999999LL) {
    // Display the mobile number
    printf("Your mobile number is: %lld\n",
mobileNumber);
} else {
    printf("Invalid input. Please enter a 10-digit
mobile number.\n");
}
return 0;
}

```

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? (Ans: 46800)

:

```

#include <stdio.h>
int main() {
    // Initial population

```

```
int initialPopulation = 30000;
// Calculate the population after the first year (20%
increase)
int populationAfterFirstYear = initialPopulation +
(initialPopulation * 20 / 100);
// Calculate the population after the second year
(30% increase)
int populationAfterSecondYear =
populationAfterFirstYear + (populationAfterFirstYear
* 30 / 100);
// Display the population after two years
printf("Population after two years: %d\n",
populationAfterSecondYear);
return 0;
}
```

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

```
:
#include <stdio.h>
int main() {
    // Declare a variable to store the character
    char character;
    // Input a character from the user
    printf("Enter a character: ");
```

```

scanf("%c", &character);
// Calculate and display the ASCII value of the
character
printf("The ASCII value of '%c' is %d\n", character,
character);
return 0;
}

```

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() {
    // Declare variables
    float basicPay, HRA, TA, salary;
    // Input the basic pay from the user
    printf("Enter the basic pay: ");
    scanf("%f", &basicPay);
    // Calculate HRA and TA
    HRA = 0.15 * basicPay; // 15% of basic pay
    TA = 0.20 * basicPay; // 20% of basic pay
    // Calculate the total salary
    salary = basicPay + HRA + TA;
}

```

```

// Display the total salary
printf("Salary of the employee is: %.2f\n", salary);
return 0;
}

```

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.

```

:
#include <stdio.h>
#include <math.h>
int main() {
    // Declare variables for the coordinates of points P
    // and Q
    double xp, yp, xq, yq;
    // Input coordinates from the user
    printf("Enter the coordinates of point P (xp yp): ");
    scanf("%lf %lf", &xp, &yp);
    printf("Enter the coordinates of point Q (xq yq): ");
    scanf("%lf %lf", &xq, &yq);
    // Calculate the slope
    double slope = (yq - yp) / (xq - xp);
    // Calculate the angle of inclination (in degrees)
    double angleInDegrees = atan(slope) * 180 / M_PI;
    // Display the results
}

```

```

printf("The slope of the line passing through P and
Q is: %.2lf\n", slope);
    printf("The angle of inclination (in degrees) is:
%.2lf\n", angleInDegrees);
    return 0;
}

```

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  $g_1, g_2, g_3, \dots, g_k$  etc. and the corresponding credits are  $c_1, c_2, c_3, \dots, c_k$ , the SPI is given by:

:

```
#include <stdio.h>
```

```
int main() {
```

```
    // Define the number of courses (k = 5)
```

```
    int k = 5;
```

```
    // Define arrays for grade points and credits for
each course
```

```
    double gradePoints[k] = {3.5, 4.0, 3.7, 3.2, 3.9};
```

```
    int credits[k] = {3, 4, 3, 2, 4};
```

```
    // Calculate SPI
```

```
    double totalGradePoints = 0.0;
```

```

int totalCredits = 0;
for (int i = 0; i < k; i++) {
    totalGradePoints += gradePoints[i] * credits[i];
    totalCredits += credits[i];
}
double spi = totalGradePoints / totalCredits;
// Display SPI
printf("The Semester Performance Index (SPI) for
%d courses is: %.2lf\n", k, spi);
return 0;
}

```

Q15. Write a program to calculate the frequency ( $f$ ) of a given wave with wavelength ( $\lambda$ ) and speed ( $c$ ), where  $c = \lambda * f$ .

```

:
#include <stdio.h>

int main() {
    // Declare variables for speed (c) and wavelength ( $\lambda$ )
    double speedOfWave, wavelengthOfWave;
    // Input the speed of the wave
    printf("Enter the speed of the wave (c): ");
    scanf("%lf", &speedOfWave);
    // Input the wavelength of the wave
    printf("Enter the wavelength of the wave ( $\lambda$ ): ");
}

```

```

scanf("%lf", &wavelengthOfWave);
// Calculate the frequency (f)
double frequencyOfWave = speedOfWave /
wavelengthOfWave;
// Display the frequency
printf("The frequency of the wave (f) is: %.2lf\n",
frequencyOfWave);
return 0;
}

```

Q16. A car travelling at 30 m/s accelerates steadily at 5 m/s<sup>2</sup> 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() {
    // Declare variables
    double initialVelocity = 30.0; // initial velocity in m/s
    double acceleration = 5.0; // acceleration in m/s^2
    double distance = 70.0; // distance in meters
    double finalVelocity;
    // Calculate the final velocity using the kinematic
equation
    finalVelocity = sqrt(pow(initialVelocity, 2) + 2 *
acceleration * distance);

```

```

    // Display the final velocity
    printf("The final velocity of the car is %.2f m/s\n",
finalVelocity);
    return 0;
}

```

Q17..A horse accelerates steadily from rest at 4 m/s<sup>2</sup> 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() {
    // Given values
    double acceleration = 4.0; // Acceleration in m/s^2
    double time = 3.0; // Time in seconds
    double initialVelocity = 0.0; // Initial velocity (at
rest)

    // (a) Calculate the final velocity using the formula v
= u + at
    double finalVelocity = initialVelocity + (acceleration
* time);

    // (b) Calculate the distance traveled using the
formula s = ut + 0.5 * at^2
    double distanceTraveled = (initialVelocity * time) +
(0.5 * acceleration * time * time);

```



```

    // Display the results
    printf("(a) The final velocity of the horse is %.2f
m/s\n", finalVelocity);
    printf("(b) The horse has traveled a distance of %.2f
meters\n", distanceTraveled);
    return 0;
}

```

Q18. Write a program to find the sum of your four last digit of your university roll number .

```

:
#include <stdio.h>

int main() {
    // Declare a variable to store the integer (roll
number)
    int rollNumber;
    // Input the integer (roll number)
    printf("Enter your university roll number: ");
    scanf("%d", &rollNumber);
    // Extract and sum the last four digits
    int lastFourDigits = rollNumber % 10000; // Get the
remainder when divided by 10,000
    int sum = 0;

    while (lastFourDigits > 0) {
        sum += lastFourDigits % 10; // Add the last digit to

```

the sum

```
        lastFourDigits /= 10; // Remove the last digit
    }
    // Display the sum of the last four digits
    printf("The sum of the last four digits of your roll
number is: %d\n", 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

:

```
#include <stdio.h>
```

```
int main() {
```

```
    // Initialize height in centimeters and weight in
kilograms
```

```
    double heightInCm = 175.0; // Replace with your
height in cm
```

```
    double weightInKg = 70.0; // Replace with your
weight in kg
```

```
    // Conversion factors
```

```
    double cmToInch = 0.393701;
```

```

double kgToPound = 2.20462;
// Convert height from cm to feet
double heightInFeet = heightInCm * cmToInch /
12.0;
// Convert weight from kg to pounds
double weightInPounds = weightInKg * kgToPound;
// Display the converted values
printf("Height: %.2f cm is equivalent to %.2f feet\n",
heightInCm, heightInFeet);
printf("Weight: %.2f kg is equivalent to %.2f
pounds\n", weightInKg, weightInPounds);
return 0;
}

```

Q20.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
- :

- A. A character variable named option:char option;
- B. An integer variable sum initialized to 0:int sum = 0;
- C.A floating-point variable product initialized to 1: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]; // Array to store the nine integers
```

```
    // Input nine integers
```

```
    printf("Enter nine integers, one at a time:\n");
```

```
    for (int i = 0; i < 9; i++) {
```

```
        scanf("%d", &numbers[i]);
```

```
    }
```

```
    // Display the numbers in sets of three
```

```
    printf("Numbers in sets of three:\n");
```

```
    for (int i = 0; i < 9; i++) {
```

```
        printf("%d", numbers[i]);
```

```
        // Print a comma and newline every three  
numbers
```

```
        if ((i + 1) % 3 == 0) {
```

```
            printf("\n");
```

```
        } else {
```

```
            printf(", ");
```

```
        }
```

```
    }
```

```
    return 0;
```

}

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

:

Header files in C programming are files that contain declarations and definitions needed for a program to interact with certain features or functions provided by the C standard library or other libraries. These files typically have a .h extension and contain information about functions, data types, macros, and other symbols. Header files serve several important purposes 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);
```

```
}
```

:

So, the corrected output of the program will be:56 70

46

Q24.What will be the output of following program?

```
#include <stdio.h>
```

```
void main()
```

```
{
int x = printf("GLA UNIVERSITY");
printf("%d", x);
}
```

:

GLA UNIVERSITY14

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

:

Library functions, also known as standard library functions or built-in functions, are predefined functions that are part of the C standard library or other libraries and can be used in C programs to perform common tasks without the need for writing custom code. These functions are designed to provide a wide range of functionality, from input/output operations to mathematical calculations and more.

Printf()

scanf()

starken()

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);
}

```

:

So, the output of the corrected program will be:29 35  
1d

Q27.What is the meaning of following statement?

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

:

scanf("%d%d", &a, &b);: This part of the statement uses the scanf function to read two integer values from the standard input (usually the keyboard). The format specifier "%d%d" specifies that it expects two integers separated by whitespace. The values are read into the variables a and b.

printf("%d", ...);: This part of the statement uses the printf function to print a value. In this case, it's trying to print the return value of the scanf function.

Q28.What will be the output of following program?

```
#include <stdio.h>
```

```
void main()
```

```
{
```

```
    printf("\nC %% FOR %% PLACEMENT\");
```

```
}
```

:

"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; // Distance in kilometers
```

```
        double time = 4.0; // Time in hours (known to be 4 hours)
```

```
        // Input the distance from the user
```

```
        printf("Enter the distance between GLA University and Delhi (in kilometers): ");
```

```
        scanf("%lf", &distance);
```

```
        // Calculate the speed (speed = distance / time)
```

```
        double speed = distance / time;
```

```
        // Display the speed of the bus
```

```
        printf("The speed of the bus is %.2lf km/h\n", speed);
```

```
        return 0;
```

```
}
```

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() {
```

```
    // Marks obtained by Satyam, Suman, and Shyam
```

```
    int satyamMarks = 50;
```

```
    int sumanMarks = 70;
```

```
    int shyamMarks = 80;
```

```
    // Calculate the total marks
```

```
    int totalMarks = satyamMarks + sumanMarks +  
shyamMarks;
```

```
    // Calculate the average marks
```

```
    float averageMarks = (float)totalMarks / 3; // Using  
float for accurate division
```

```
    // Display the average marks
```

```
    printf("The average marks of Satyam, Suman, and  
Shyam is: %.2f\n", averageMarks);
```

```
    return 0;
```

```
}
```

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() {
    int sauravMoney, sajalMoney, temp;
    // Input the initial amounts of money
    printf("Enter the amount of money given to Saurav:
");
    scanf("%d", &sauravMoney);
    printf("Enter the amount of money given to Sajal:
");
    scanf("%d", &sajalMoney);
    // Swap the money amounts using a temporary
variable
    temp = sauravMoney;
    sauravMoney = sajalMoney;
    sajalMoney = temp;
    // Display the corrected amounts of money
    printf("After rectifying the mistake:\n");
    printf("Money given to Saurav: %d\n",
sauravMoney);
    printf("Money given to Sajal: %d\n", sajalMoney);
    return 0;
}
```

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() {
    double speed_kmph = 4.0; // Speed in kilometers per
hour
    double time_hr = 3.0 / 60.0; // Time in hours (3
minutes converted to hours)
    // Calculate the distance traveled
    double distance_km = speed_kmph * time_hr;
    // Display the distance
    printf("The distance traveled is %.2f kilometers\n",
distance_km);
    return 0;
}
```

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

:

```
printf("Hello,\n\tWorld!\n");
```

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

:

Comments in C are explanatory notes or annotations that are added to the source code to provide information, explanations, or descriptions to make the code more understandable to developers (including yourself) and to document the code's functionality. Comments are ignored by the compiler and do not affect the program's execution; they exist solely for human readability.

In C, there are two types of comments:

**Single-line comments:** These comments are used for adding explanations or notes on a single line. They begin with `//` and continue until the end of the line.

`// This is a single-line comment`

`int x = 10; // This comment explains the purpose of this variable`

**Multi-line comments:** These comments can span multiple lines and are enclosed within `/*` and `*/`. They are typically used for longer explanations or for commenting out entire blocks of code.

`/* This is a multi-line comment.`

`It can span multiple lines and is useful  
for providing detailed explanations. */`

`int y = 20;`

Q35.What is wrong in this statement?

```
scanf("%d",number);
```

:

The statement `scanf("%d", number);` has a minor issue in its format specifier. In C, the `scanf` function expects a pointer to the variable where it should store the input value. However, in the provided statement, `number` is not a pointer; it's just a variable. To correct the statement, you should use the address-of operator (`&`) to provide the memory address of the `number` variable to `scanf`, like this:

```
scanf("%d", &number);
```

Q36.What will be the output?

```
#include <stdio.h>
```

```
int main()
```

```
{
```

```
    if (sizeof(int) > -1)
```

```
        printf("Yes");
```

```
    else
```

```
        printf("No");
```

```
    return 0;
```

```
}
```

:

The output of the given program will be "Yes."

Q37.

:

Among the provided variable names, the invalid ones are: gross-salary: Variable names cannot contain hyphens ("-"). You can use underscores (\_) instead if needed. For example, gross\_salary would be a valid alternative.

avg.: Variable names cannot contain a period (dot). Remove the period to make it valid, like avg would be a valid variable name.

thereisbookinmysoup: This variable name is valid. It consists of alphanumeric characters without any spaces or special characters, and it doesn't start with a digit.

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 volume = 175.0; // Volume of the tank in
gallons
    double rate = 25.0; // Drain rate in gallons per hour
    // Calculate the time required to drain the tank
completely
    double time_hours = volume / rate;
// Display the time required in hours
    printf("Time required to completely clean the tank:
%.2f hours\n", time_hours);
    return 0;
}

```

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 desiredPower = 0.75; // 75% battery power
as a decimal
    double x; // Number of hours
    // Solve for x using the equation:  $y = -0.2x + 1$ 

```

```
// Rearrange to find x:  $x = (1 - y) / 0.2$ 
x = (1.0 - desiredPower) / 0.2;
// Display the result
printf("The battery power will be at 75%% after
%.2f hours.\n", x);
return 0;
}
```

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

:

- a. Compiler

Q41.What is the format specifier for an Octal Number?

- a.%0    b.%d
- c. %o    d. %

:

- c. %o

Q42.Which format specifier is used to print the exponent value upto 2 decimal places.

- a. %e.    b.%2f.    c. %f    d.%2e

:

- d. %.2e



Q43.Which of the following is not a basic data type?

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

:

- b. array

Q44.What is the output of following code?

```
#include<stdio.h>

void main()
{
    int x=0;
    x= printf("\nhello\b\\");
    printf("%d",x);
}
```

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

:

- c. "hell"8

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

:

d. Garbage,5

Q46.Which of the following is an identifier?

a. &fact.    b. Basic\_pay.    c. enum.    d. 1sum

:

C. enum

Q47.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

:

C.1

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

A.(365.55)<sub>10</sub> = (?)<sub>2</sub>

$$B.(453.65)_{10} = (?)_8$$

$$C.(5164.12)_{10} = (?)_{16}$$

$$D.(23.65)_{10} = (?)_5$$

$$E.(772)_{10} = (?)_7$$

:

$$(365.55)_{10} = (101101101.10011)_2$$

$$(453.65)_{10} = (705.52)_8$$

$$(5164.12)_{10} = (1424.28)_{16} \quad (23.65)_{10} = (43.1)_5$$

$$(772)_{10} = (1664)_7$$

Q49.convert the following numbers to decimal number system-

$$(325.54)_6 = (?)_{10}$$

$$(1001010110101.1110101)_2 = (?)_{10}$$

$$(742.72)_8 = (?)_{10}$$

$$(AC94.C5)_{16} = (?)_{10}$$

:

$$(325.54)_6 = (179.08333333)_{10} \text{ (approximately)}$$

$$(1001010110101.1110101)_2 = (4781.9765625)_{10}$$

$$\text{(approximately)} \quad (742.72)_8 = (482.875)_{10}$$

$$AC94.C5)_{16} = (44116.7734375)_{10} \text{ (approximately)}$$

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

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

:

$$(DB56.CD4)_{16} = (1101101101010110.110011010100)_2$$

$$(DB56.CD4)_{16} = (33566.6413125)_8$$

$$(DB56.CD4)_{16} = (56222.803125)_{10}$$

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

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

:

$$(473.42)_8 = (1001110011.010)_2$$

$$(473.42)_8 = (315.25)_{10}$$

$$(473.42)_8 = (1A3.2)_{16}$$

$$(473.42)_8 = (1333.21)_5$$

Q52.Find the value of A?

$$(23)_{10} = (17)_A$$

$$(21)_{16} = (41)_A$$

$$(32)_8 = (101)_A$$

:

$$A \approx 1.35$$

$$A \approx 0.51$$

$$A \approx 0.32$$

Q53.What will be the output of following program?

Assume integer is of 2 bytes

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

```
}
```

```
:
```

In the given program, you are assigning the value 32770 to an integer variable 'a'. Since you've mentioned that an integer is assumed to be 2 bytes, this program can result in an overflow because the value 32770 is outside the range that a 2-byte integer can hold.

```
Q54.#include <stdio.h>
```

```
int main()
```

```
{
```

```
float c = 5.0;
```

```
printf ("Temperature in Fahrenheit is %.2f", (9/5)*c +  
32);
```

```
return 0;
```

```
}
```

```
:
```

```
(9/5)*c + 32
```