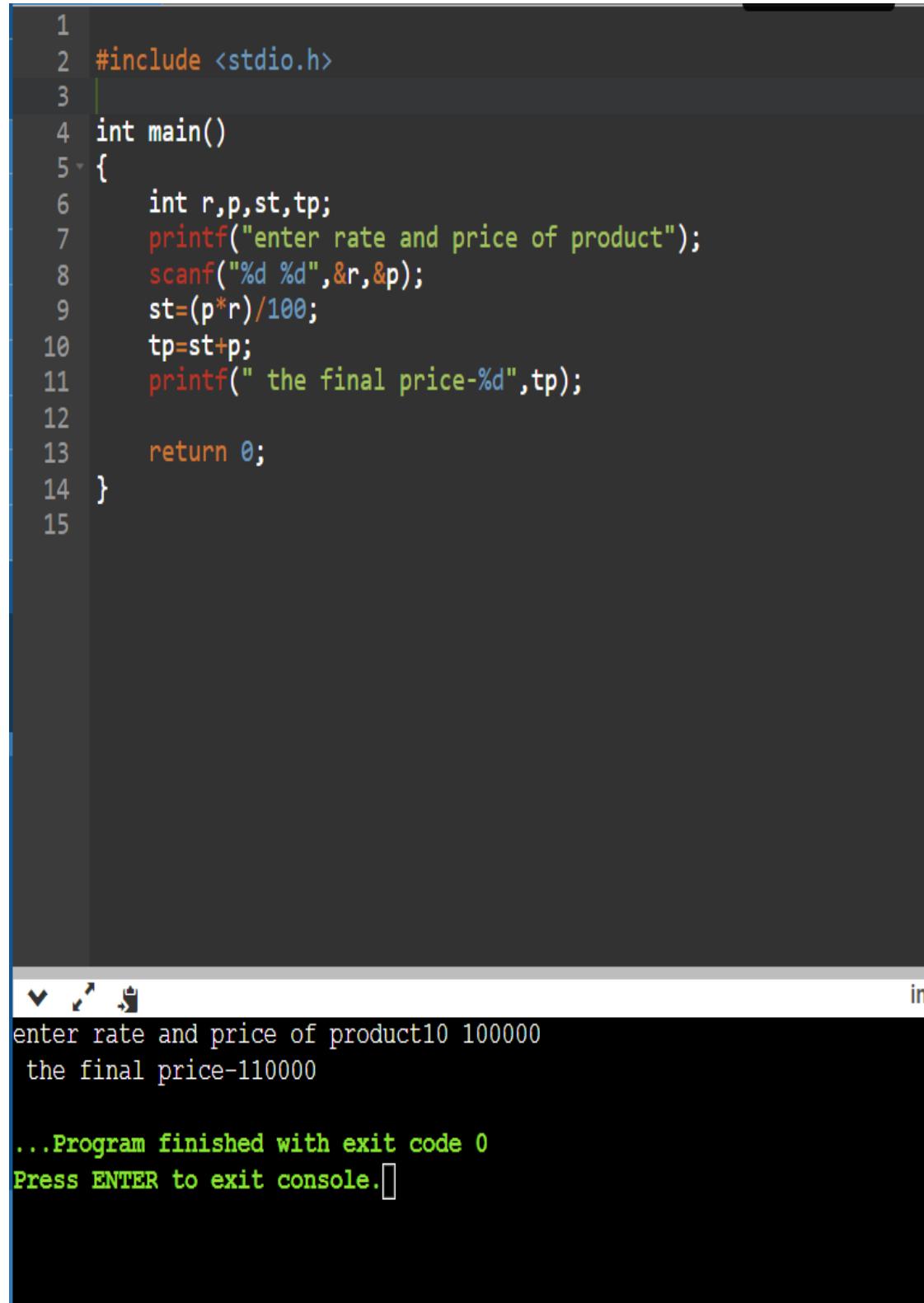


Assignment

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.



```
1
2 #include <stdio.h>
3
4 int main()
5 {
6     int r,p,st,tp;
7     printf("enter rate and price of product");
8     scanf("%d %d",&r,&p);
9     st=(p*r)/100;
10    tp=st+p;
11    printf(" the final price-%d",tp);
12
13    return 0;
14 }
15
```

enter rate and price of product10 100000
the final price-110000

...Program finished with exit code 0
Press ENTER to exit console.[]

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.

```
1  /* PROGRAM 2 */
2  #include <stdio.h>
3  int main()
4  {
5      int wh,nh,e,ts;
6      printf("enter the wages per hour and no. of hours ");
7      scanf("%d %d",&wh,&nh);
8      if(nh>30)
9      {
10         e=nh-30;
11         ts=(30*wh)+(e*2*wh);
12     }
13 }
14 else
15 {
16     ts=nh*wh;
17 }
18 printf(" the total salary is-%d",ts);
19
20     return 0;
21 }
22
```

```
enter the wages per hour and no. of hours 10000 45
the total salary is-600000

...Program finished with exit code 0
Press ENTER to exit console.[]
```

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.

The screenshot shows a C programming environment with the following details:

- Toolbar:** Includes icons for file operations (New, Open, Save), Run, Debug, Stop, Share, Save, Beautify, and a download icon.
- Code Editor:** The file is named "main.c". The code calculates the change from a 500 Rupee note after purchasing 2.0 kg of Apple (50.0 per kg), 1.5 kg of Mango (35.0 per kg), 2.5 kg of Potato (10.0 per kg), and 1.0 kg of Tomato (15.0 per kg). The output is displayed in the terminal below.
- Terminal Output:** The output shows the calculated change as 307.500000, followed by standard completion messages.

```
/* PROGRAM 3 */
#include <stdio.h>
int main()
{
    float tp;
    tp=500-(2*50+1.5*35+2.5*10+15);
    printf(" the money returned by the shopkeeper to X- %f",tp);
    return 0;
}
```

```
the money returned by the shopkeeper to X- 307.500000
..Program finished with exit code 0
Press ENTER to exit console.
```

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

The screenshot shows a C IDE interface with the following details:

- Toolbar:** Includes icons for Run, Debug, Stop, Share, Save, and Beautify.
- Code Editor:** The file is named "main.c". The code is as follows:

```
1  /*PROGRAM 4*/
2  #include <stdio.h>
3  int main()
4  {
5      int b=0;
6      char name=' ';
7      long dob;
8      long mobileNumber;
9      printf("Enter your date of birth in DDMMYYYY format : ");
10     scanf("%ld",&dob);
11     printf("Enter your mobile number: ");
12     scanf("%ld",&mobileNumber);
13     printf("Enter your name and write a '*' at the end of name : ");
14     for(int a=0;a<=50;a++)
15     {
16         scanf("%c",&name);
17         while(a==1)
18         {
19             printf("\nName -");
20             a++;
21         }
22         if(name=='*')
23             break;
24         else
25         {
26             printf("%c",name);
27         }
28     }
29     printf("\nDate of Birth: %ld\n", dob);
30     printf("Mobile Number: %ld\n", mobileNumber);
31     return 0;
32 }
33
34 }
```

Output Window:

```
Enter your date of birth in DDMMYYYY format : 19092004
Enter your mobile number: 9988776655
Enter your name and write a '*' at the end of name :
KETAN SINGH*

Name -KETAN SINGH
Date of Birth: 19092004
Mobile Number: 9988776655

...Program finished with exit code 0
Press ENTER to exit console.
```

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.

The screenshot shows a C programming environment with the following details:

- Toolbar:** Includes icons for file operations (New, Open, Save), run (Run, Stop, Share, Save, Beautify).
- Code Editor:** File named "main.c" containing the following C code:

```
1 /* PROGRAM 5*/
2 #include <stdio.h>
3 int main() {
4     int num;
5     char letter;
6     float decimal;
7     printf("Enter an integer: ");
8     scanf("%d", &num);
9     printf("Enter a character: ");
10    scanf(" %c", &letter);
11    printf("Enter a float value: ");
12    scanf("%f", &decimal);
13    printf("\nInteger: %d\nCharacter: %c\nFloat Value: %.2f\n", num, letter, decimal);
14    return 0;
15 }
```
- Output Window:** Labeled "input" at the top right. It shows the user input followed by the program's output:

```
Enter an integer: 10
Enter a character: G
Enter a float value: 10.35

Integer: 10
Character: G
Float Value: 10.35
```

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

The screenshot shows a C programming environment with the following interface elements:

- Toolbar: Run, Debug, Stop, Share, Save, Beautify.
- File tab: main.c
- Code editor:

```
1 /* PROGRAM 6*/
2 #include<stdio.h>
3 int main() {
4     float A = 172.53;
5     printf("The sales total is : $ %.2f\n", A);
6     return 0;
7 }
8
```
- Output console:

```
The sales total is : $ 172.53

...Program finished with exit code 0
Press ENTER to exit console.
```

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.

The screenshot shows a C programming environment with the following details:

- Toolbar:** Includes icons for file operations (New, Open, Save), Run, Debug, Stop, Share, and Help.
- Code Editor:** The file is named "main.c". The code is as follows:

```
1  /* PROGRAM 7*/
2  #include<stdio.h>
3  int main() {
4      float p;
5      p=3*6.5;
6      printf(" total apple he has-%f",p);
7      return 0;
8  }
9
10
```

- Output Console:** Displays the program's output:
total apple he has-19.500000
...Program finished with exit code 0
Press ENTER to exit console.

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

The screenshot shows a C IDE interface with a dark theme. At the top, there is a toolbar with icons for file operations (New, Open, Save), Run, Debug, Stop, Share, and Save. Below the toolbar, the file name "main.c" is displayed in a tab. The main code editor area contains the following C code:

```
1 /* PROGRAM 8*/
2 #include <stdio.h>
3 #include <math.h>
4 int main() {
5     float num = 123.456;
6     printf("%.2e\n", num);
7     return 0;
8 }
```

At the bottom of the screen, there is a terminal window showing the output of the program. The output is:

```
.23e+02
..Program finished with exit code 0
Press ENTER to exit console.
```

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

The screenshot shows a C IDE interface with the following details:

- Toolbar:** Includes icons for Run (green), Debug (blue), Stop (red), Share (orange), Save (dark blue), and Beautify (light blue).
- Code Editor:** File named "main.c" containing the following code:

```
1  /* PROGRAM 9*/
2  #include <stdio.h>
3  int main() {
4      long mobileNumber;
5      printf("Enter your 10-digit mobile number: ");
6      scanf("%ld", &mobileNumber);
7      printf("Your mobile number is: %ld\n", mobileNumber);
8      return 0;
9 }
```
- Output Console:** Shows the execution of the program:

```
input
Enter your 10-digit mobile number: 9956808917
Your mobile number is: 9956808917

Program finished with exit code 0
Press ENTER to exit console.
```

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)

The screenshot shows a C programming environment with the following details:

- Toolbar:** Includes icons for Run, Debug, Stop, Share, Save, and Beautify.
- Language:** Set to C.
- Code Editor:** File named "main.c" containing the provided C code.
- Output Console:** Displays the program's output: "Population after two years: 46800".
- Bottom Status:** Shows ".Program finished with exit code 0" and "Press ENTER to exit console."

```
1 /* PROGRAM 10*/
2 #include <stdio.h>
3 int main() {
4     int initialPopulation = 30000;
5     double firstYearIncrease = 0.20;
6     double secondYearIncrease = 0.30;
7     int populationAfterTwoYears;
8     int populationAfterFirstYear = initialPopulation + (initialPopulation * firstYearIncrease);
9     populationAfterTwoYears = populationAfterFirstYear + (populationAfterFirstYear * secondYearIncrease);
10    printf("Population after two years: %d\n", populationAfterTwoYears);
11    return 0;
12 }
```

Population after two years: 46800

.Program finished with exit code 0
Press ENTER to exit console. █

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

The screenshot shows a C IDE interface with a dark theme. At the top is a toolbar with icons for file operations (New, Open, Save, etc.) and tool buttons for Run, Debug, Stop, Share, Save, and Beautify. Below the toolbar is a tab bar with 'main.c' selected. The main area contains the following C code:

```
1  /* PROGRAM 11*/
2  #include <stdio.h>
3  int main() {
4      char ch;
5      printf("Enter a character: ");
6      scanf(" %c", &ch);
7      printf("The ASCII value of %c is %d\n", ch, ch);
8      return 0;
9 }
```

Below the code editor is a terminal window showing the program's output. It prompts the user to enter a character ('K') and then displays the ASCII value ('75'). The output ends with a message indicating the program finished with exit code 0 and prompting the user to press ENTER to exit the console.

```
▼ ▷ ⌂
Enter a character: K
the ASCII value of K is 75

..Program finished with exit code 0
Press ENTER to exit console. █
```

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.

The screenshot shows a C IDE interface with the following details:

- Toolbar:** Includes icons for file operations (New, Open, Save, Print, Share, Help), Run, Debug, Stop, and Beautify.
- Code Editor:** The file "main.c" is open, displaying the following C code:

```
1  /* PROGRAM 12*/
2  #include <stdio.h>
3  int main() {
4      float basicPay, salary, hra, ta;
5      printf("Enter the basic pay: ");
6      scanf("%f", &basicPay);
7      hra = 0.15 * basicPay;
8      ta = 0.20 * basicPay;
9      salary = basicPay + hra + ta;
10     printf("The salary is: %.2f\n", salary);
11     return 0;
12 }
```
- Output Console:** Shows the program's output:

```
Enter the basic pay: 45000
The salary is: 60750.00

...Program finished with exit code 0
Press ENTER to exit console.
```

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.

The screenshot shows a C IDE interface with the following details:

- Toolbar:** Includes icons for file operations (New, Open, Save), Run, Debug, Stop, Share, and Beautify.
- Code Editor:** The file is named "main.c". The code is as follows:

```
1  /* PROGRAM 13*/
2  #include <stdio.h>
3  #include <math.h>
4  int main() {
5      float xp, yp, xq, yq, slope, angle;
6
7      printf("Enter the x-coordinate of point P: ");
8      scanf("%f", &xp);
9      printf("Enter the y-coordinate of point P: ");
10     scanf("%f", &yp);
11     printf("Enter the x-coordinate of point Q: ");
12     scanf("%f", &xq);
13     printf("Enter the y-coordinate of point Q: ");
14     scanf("%f", &yq);
15     slope = (yq - yp) / (xq - xp);
16     angle = atan(slope) * 180 / M_PI;
17     printf("The slope of the line is: %.2f\n", slope);
18     printf("The angle of inclination is: %.2f degrees\n", angle);
19     return 0;
20 }
```

Output Window: Labeled "input" on the right. The output is:

```
Enter the x-coordinate of point P: 9
Enter the y-coordinate of point P: 5
Enter the x-coordinate of point Q: 5
Enter the y-coordinate of point Q: 4
The slope of the line is: 0.25
The angle of inclination is: 14.04 degrees
```

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

The screenshot shows a C IDE interface with the following components:

- Toolbar:** Includes icons for Run, Debug, Stop, Share, Save, and Beautify.
- Code Editor:** A dark-themed editor window titled "main.c" containing the following C code:

```
1 /*PROGRAM 15*/
2 #include <stdio.h>
3 int main() {
4     float wavelength, speed, frequency;
5     printf("Enter the wavelength of the wave in meters: ");
6     scanf("%f", &wavelength);
7     printf("Enter the speed of the wave in meters per second: ");
8     scanf("%f", &speed);
9     frequency = speed / wavelength;
10    printf("The frequency of the wave is %.2f hertz.\n", frequency);
11    return 0;
12 }
```
- Output Console:** A black terminal window labeled "input" at the top right, showing the program's execution:

```
Enter the wavelength of the wave in meters: 4500
Enter the speed of the wave in meters per second: 1051414
The frequency of the wave is 233.65 hertz.

...Program finished with exit code 0
Press ENTER to exit console.
```

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: $v^2 = u^2 + 2as$]

The screenshot shows a code editor window for a C program named "main.c". The code implements the kinematic equation $v^2 = u^2 + 2as$ to calculate the final velocity of a car. The program includes an include directive for stdio.h, declares variables for initial velocity (u2), acceleration (a), distance (s), and final velocity (v2), and prints the result using printf.

```
1  /*PROGRAM 16*/
2  #include <stdio.h>
3  int main() {
4      int u2=30,a=5,s=70,v2;
5      v2=u2+(2*a*s);
6      printf("the final velocity - %d",v2);
7      return 0;
8 }
```

The terminal window below the editor shows the output of the program: "the final velocity - 730", followed by a message indicating the program has finished and prompting the user to press Enter to exit the console.

```
the final velocity - 730
...Program finished with exit code 0
Press ENTER to exit console.
```

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) $s = ut + \frac{1}{2}at^2$]

```
main.c
1  /*PROGRAM 17*/
2  #include <stdio.h>
3  int main() {
4      int a=4,t=3,v,u=0;
5      float s;
6      v=u+(a*t);
7      s=(u*t)+(0.5*a*t*t);
8      printf(" the velocity is - %d    ",v);
9      printf("the distance traveled- %0.2f",s);
10     return 0;
11 }
```

the velocity is - 12 the distance traveled- 18.00
...Program finished with exit code 0
Press ENTER to exit console.

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

The screenshot shows a C IDE interface with a dark theme. At the top, there is a toolbar with icons for Run, Debug, Stop, Share, Save, and Beautify. Below the toolbar, the file name "main.c" is displayed. The code in the editor is:

```
1  /*PROGRAM 18*/
2  #include <stdio.h>
3  int main()
4  {
5      int num, sum = 0, r;
6      printf("Enter your university roll number: ");
7      scanf("%d", &num);
8      while (num > 0)
9      {
10         r = num % 10;
11         sum = sum + r;
12         num = num / 10;
13     }
14     printf("The sum of your last four digits is: %d", sum);
15     return 0;
16 }
```

At the bottom of the screen, the terminal window displays the program's output:

```
Enter your university roll number: 140654
The sum of your last four digits is: 20

..Program finished with exit code 0
Press ENTER to exit console.
```

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**

The screenshot shows a C IDE interface with the following components:

- Toolbar:** Includes icons for file operations (New, Open, Save), run/debug (Run, Debug, Stop, Share), and beautify.
- Code Editor:** The file "main.c" is open, containing the following C code:

```
1 /*PROGRAM 19*/
2 #include <stdio.h>
3 int main()
4 {
5     int height_cm = 179;
6     int weight_kg = 85;
7     float height_feet = height_cm * 0.393701;
8     float weight_pounds = weight_kg * 2.20462;
9     printf("Height in feet: %.2f\n", height_feet);
10    printf("Weight in pounds: %.2f\n", weight_pounds);
11    return 0;
12 }
```
- Output Console:** Displays the program's output:

```
Height in feet: 70.47
Weight in pounds: 187.39

...Program finished with exit code 0
Press ENTER to exit console.
```

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

```
char option=' ';
int sum = 0;
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.

The screenshot shows a C programming environment with the following details:

- Toolbar:** Includes buttons for Run, Debug, Stop, Share, Save, and Beautify.
- Code Editor:** File named "main.c" containing the following code:

```
1 /*PROGRAM 21*/
2 #include <stdio.h>
3 int main()
4 {
5     int num1, num2, num3, num4, num5, num6, num7, num8, num9;
6     printf("Enter nine integers: ");
7     scanf("%d %d %d %d %d %d", &num1, &num2, &num3, &num4, &num5, &num6, &num7, &num8, &num9);
8     printf("%d, %d, %d\n", num1, num2, num3);
9     printf("%d, %d, %d\n", num4, num5, num6);
10    printf("%d, %d, %d\n", num7, num8, num9);
11    return 0;
12 }
```
- Output Console:** Labeled "input" at the top right. It displays the program's output after running:

```
Enter nine integers: 1 2 3 4 5 6 7 8 9
1, 2, 3
4, 5, 6
7, 8, 9

...Program finished with exit code 0
Press ENTER to exit console.
```

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

ANSWER: Header files are library files that include main statements of the C language. They assist in accessing these commands to perform operations in C and create programs.

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);
}
```

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

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

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);
}
```

Q27. What is the meaning of following statement?

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

Q28. What will be the output of following program?

```
#include <stdio.h>
void main()
{
    printf(" \\"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

The screenshot shows a C programming environment with the following details:

- Toolbar:** Includes icons for Save, Run, Debug, Stop, Share, Save, Beautify, and Download.
- Code Editor:** File named "main.c" containing the following C code:

```
1 /*PROGRAM 29*/
2 #include <stdio.h>
3 int main()
4 {
5     float distance, speed;
6     printf("Enter the distance between GLA University and Delhi in kilometers: ");
7     scanf("%f", &distance);
8     speed = distance / 4;
9     printf("The speed of the bus is %.2f km/hr\n", speed);
10    return 0;
11 }
```
- Output Console:** Labeled "input" at the top. Displays the program's output:

```
Enter the distance between GLA University and Delhi in kilometers: 150
The speed of the bus is 37.50 km/hr

...Program finished with exit code 0
Press ENTER to exit console.
```

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.

The screenshot shows a C IDE interface with the following components:

- Toolbar:** Includes icons for Run, Debug, Stop, Share, Save, and Beautify.
- Code Editor:** A dark-themed editor with syntax highlighting for C code. The file is named "q30.c". The code calculates the average of three marks (50, 70, 80) and prints the result.
- Output Window:** Shows the program's output. It displays the calculated average mark (66.00) and a message indicating the program has finished.

```
q30.c
1 /*PROGRAM 30*/
2 #include <stdio.h>
3 int main()
4 {
5     int satyamMarks = 50;
6     int sumanMarks = 70;
7     int shyamMarks = 80;
8     float averageMarks = (satyamMarks + sumanMarks + shyamMarks) / 3;
9     printf("The average marks of the three participants is %.2f\n", averageMarks);
10    return 0;
11 }
```

```
input
The average marks of the three participants is 66.00
Program finished with exit code 0
Press ENTER to exit console.
```

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.

The screenshot shows a C IDE interface with the following details:

- Toolbar:** Includes icons for file operations (New, Open, Save), run/debug (Run, Debug, Stop, Share, Save, Beautify).
- Code Editor:** File named "main.c" containing the provided C code.
- Output Console:** Labeled "input" at the top, showing the program's interaction with the user. It displays:
 - User input: Enter the amount of money given to Saurav: 700
 - User input: Enter the amount of money given to Sajal: 7904
 - Program output: The corrected amount given to Saurav is 7904
 - Program output: The corrected amount given to Sajal is 700
- Bottom Status:** "...Program finished with exit code 0" and "Press ENTER to exit console."

```
1 /*PROGRAM 31*/
2 #include <stdio.h>
3 int main()
4 {
5     int moneyGivenToSaurav, moneyGivenToSajal;
6     printf("Enter the amount of money given to Saurav: ");
7     scanf("%d", &moneyGivenToSaurav);
8     printf("Enter the amount of money given to Sajal: ");
9     scanf("%d", &moneyGivenToSajal);
10    int temp = moneyGivenToSaurav;
11    moneyGivenToSaurav = moneyGivenToSajal;
12    moneyGivenToSajal = temp;
13    printf("The corrected amount given to Saurav is %d\n", moneyGivenToSaurav);
14    printf("The corrected amount given to Sajal is %d\n", moneyGivenToSajal);
15    return 0;
16 }
```

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.

The screenshot shows a C programming environment with the following details:

- Toolbar:** Includes icons for Run, Debug, Stop, Share, Save, and Beautify.
- Code Editor:** File named "main.c" containing the following C code:

```
1 /*PROGRAM 32*/
2 #include <stdio.h>
3 int main()
4 {
5     float speed = 4;
6     int time = 3;
7     speed = speed * 5/18;
8     float distance = speed * time;
9     printf("The distance travelled is %.2f m\n", distance);
10    return 0;
11 }
12
```
- Output Console:** Displays the program's output:

```
The distance travelled is 3.33 m

...Program finished with exit code 0
Press ENTER to exit console.
```

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

YES

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

Comments are statements used to specify what type of work are you doing in the given line it is of two types

A- Single line comment

B- Double line comment

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

'&' sign is not used before number but in syntax of scanf it is important

Q36. What will be the output?

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

Q37. Point out which of the following variable names are invalid:
gross-salary INTEREST , salary of emp , avg. , thereisbookinmysoup

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.

The screenshot shows a C programming environment with the following details:

- Toolbar:** Includes icons for file operations (New, Open, Save), Run, Debug, Stop, Share, and Beautify.
- Code Editor:** The file "main.c" is open, containing the following code:

```
1  /*PROGRAM 38*/
2  #include <stdio.h>
3  int main()
4  {
5      int volume = 175;
6      float rate = 25;
7      float time = volume / rate;
8      printf("The time required to drain the tank is %.2f hours.\n", time);
9      return 0;
10 }
11
```
- Output Console:** Displays the program's output:

```
The time required to drain the tank is 7.00 hours.

...Program finished with exit code 0
Press ENTER to exit console.
```

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

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

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

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

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

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

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

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

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. 1sum

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

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

- a) $(365.55)_{10} = (101101101.10001100110011001101)_2$
- b) $(453.65)_{10} = (705.51463146314631463146)_8$
- c) $(5164.12)_{10} = (142C.1EB851EB851EB851EB85)_{16}$
- d) $(23.65)_{10} = (43.3111111111111111)_5$
- e) $(772)_{10} = (2152)_7$

Q49. Convert the following numbers to decimal number system-

- a) $(325.54)_6 = (125.944444444444444444)_{10}$
- b) $(1001010110101.1110101)_2 = (4789.90625)_{10}$
- c) $(742.72)_8 = (482.9062)_{10}$
- d) $(AC94.C5)_{16} = (44180.76953125)_{10}$

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

$$(DB56.CD4)_{16} = (1101101101010110.110011010)_2, \quad (?)_8, \quad (?)_4$$

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

$$(473.42)_8 = (100111011.10001)_2, \quad (315.53125)_{10}, \quad (13B)_{16}, \\ (2230.23120034231200342312)_5$$

Q52. Find the value of A?

- a) $(23)_{10} = (17)_A \quad A=16$
- b) $(21)_{16} = (41)_A \quad A=8$
- c) $(32)_8 = (101)_A \quad A=$

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

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

Q54: #include <stdio.h>

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

}

Temperature in Fahrenheit is 37.00

