

## 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.

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.

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.

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

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.

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

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.

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

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? (Ans: 46800)

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

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.

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.

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

Q 16. 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:  $v^2 = u^2 + 2as$ ]

Q 17. 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)  $s = ut + \frac{1}{2}at^2$ ]

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

Q19. Write a program to initialize your height and weight in cm. and kgs respectively in 2 variables(Don't input using scanf) 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

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

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);
}
```

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);
}
```

Q 27. 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(" \nC %% 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.

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.

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.

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.

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

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

Q35. What is wrong in this statement? 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;
}
```

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

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

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.

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%?

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. %.2f    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("\n"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. lsum

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

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

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);
}
```

Q54: #include <stdio.h>

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

