CDAC Hyderabad PG - DAC MAR 23Logical Building and Problem Solving Assignment -3

1. Write a C program to accept two integers and check whether they are equal or not.

Test Data : 15 15
Expected Output :
Number1 and Number2 are equal

2. Write a C program to check whether a given number is even or odd.

Test Data : 15
Expected Output :
15 is an odd integer

3. Write a C program to check whether a given number is positive or negative.

Test Data : 15
Expected Output :
15 is a positive number

4. Write a C program to find whether a given year is a leap year or not.
Test Data : 2016
Expected Output :
2016 is a leap year.

5. Write a C program to read the age of a candidate and determine whether he is eligible to cast his/her own vote.
Test Data : 21
Expected Output :
Congratulation! You are eligible for casting your vote.

6. Write a C program to read the value of an integer m and display the value of n is 1 when m is larger than 0, 0 when m is 0 and -1 when m is less than 0.

Test Data : -5
Expected Output :
The value of n = -1

7. Write a C program to accept the height of a person in centimeters and categorize the person according to their height.
Test Data : 135
Expected Output :
The person is Dwarf.

8. Write a C program to find the largest of three numbers.
Test Data : 12 25 52
Expected Output :
1st Number = 12,   2nd Number = 25,   3rd Number = 52
The 3rd Number is the greatest among three

9. Write a C program to accept a coordinate point in an XY coordinate system and determine in which quadrant the coordinate point lies.

Test Data : 7 9
Expected Output :
The coordinate point (7,9) lies in the First quadrant.

10. Write a C program to read the roll no, name and marks of three subjects and calculate the total, percentage and division.
Test Data :
Input the Roll Number of the student :784
Input the Name of the Student :James
Input the marks of Physics, Chemistry and Computer Application : 70 80 90

Expected Output :
Roll No : 784
Name of Student : James
Marks in Physics : 70
Marks in Chemistry : 80
Marks in Computer Application : 90
Total Marks = 240
Percentage = 80.00
Division = First

11. Write a C program to read temperature in centigrade and display a suitable message according to the temperature state below:

Temp < 0 then Freezing weather
Temp 0-10 then Very Cold weather
Temp 10-20 then Cold weather
Temp 20-30 then Normal in Temp
Temp 30-40 then Its Hot
Temp >=40 then Its Very Hot
Test Data :
42
Expected Output :
Its very hot.

12. Write a C program to check whether a triangle is Equilateral, Isosceles or Scalene.
Test Data :
50 50 60
Expected Output :
This is an isosceles triangle.

13. Write a C program to check whether a triangle can be formed with the given values for the angles.
Test Data :
40 55 65
Expected Output :

The triangle is not valid.

14. Write a C program to check whether a character is an alphabet, digit or special character.
Test Data :
@
Expected Output :
This is a special character.

15. Write a C program to check whether an alphabet is a vowel or a consonant.

Test Data :
k
Expected Output :
The alphabet is a consonant.

16. Write a C program to calculate profit and loss on a transaction.
Test Data :
500 700
Expected Output :
You can booked your profit amount : 200

17. Write a program in C to display the first 10 natural numbers.

Expected Output :
1 2 3 4 5 6 7 8 9 10

18. Write a C program to compute the sum of the first 10 natural numbers.
Expected Output :
The first 10 natural number is :
1 2 3 4 5 6 7 8 9 10

The Sum is : 55

19. Write a program in C to display n terms of natural numbers and their sum.
Test Data : 7
Expected Output :
The first 7 natural number is :
1 2 3 4 5 6 7
The Sum of Natural Number upto 7 terms : 28
20. Write a program in C to read 10 numbers from the keyboard and find their sum and average.

Test Data :
Input the 10 numbers :
Number-1 :2
...
Number-10 :2
Expected Output :
The sum of 10 no is : 55
The Average is : 5.500000
21. Write a program in C to display the cube of the number up to an integer.

Test Data :
Input number of terms : 5
Expected Output :
Number is : 1 and cube of the 1 is :1
Number is : 2 and cube of the 2 is :8
Number is : 3 and cube of the 3 is :27
Number is : 4 and cube of the 4 is :64
Number is : 5 and cube of the 5 is :125

22. Write a program in C to display the multiplication table for a given integer.
Test Data :
Input the number (Table to be calculated) : 15
Expected Output :

15 X 1 = 15
...
...
15 X 10 = 150

23. Write a program in C to display the multiplier table vertically from 1 to n.

Test Data :
Input upto the table number starting from 1 : 8
Expected Output :
Multiplication table from 1 to 8
1x1 = 1, 2x1 = 2, 3x1 = 3, 4x1 = 4, 5x1 = 5, 6x1 = 6, 7x1 = 7, 8x1 = 8
...
1x10 = 10, 2x10 = 20, 3x10 = 30, 4x10 = 40, 5x10 = 50, 6x10 = 60, 7x10 = 70, 8x10 = 80

24. Write a C program to display the n terms of odd natural numbers and their sum.
Test Data
Input number of terms : 10
Expected Output :
The odd numbers are :1 3 5 7 9 11 13 15 17 19
The Sum of odd Natural Number upto 10 terms : 100

25. Write a program in C to read any digit and display it in the word.

Test Data :
4
Expected Output :
Four

26. Write a C program for reading any Month Number and displaying the Month name as a word.
Test Data :
4
Expected Output :
April

27. Write a program in C to read any Month Number in integer and display the number of days for this month.
Test Data :
7
Expected Output :
Month have 31 days
28. Write a C program which computes the area of various geometrical shapes using a menu-driven approach.
Test Data :
1
5
Expected Output :
The area is : 78.500000
29. Write a program in C which is a Menu-Driven Program to perform a simple calculation.
Test Data :
10
2
3
Expected Output :
The Multiplication of 10 and 2 is: 20

30. Write a C program that finds all the divisors of an integer.

Test Data:
Input an integer: 45
Expected Output:
All the divisor of 45 are:
1
3
5
9
15
45

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