Class 9 Computer Project Session 2020-21

Question 1

Write a program to input any two integers and find and display the greater integer using conditional/ternary operator.

Question 2

A shopkeeper offers 30% discount on purchasing articles whereas the other shopkeeper offers two successive discounts 20% and 10% for purchasing the same articles. Write a program in Java to compute and display the discounts. Take the price of an article as the input.

Question 3

Write a program to input two unequal numbers. Display the numbers after swapping their values in the variables without using a third variable.

Sample Input: a = 23, b = 56

Sample Output: a = 56, b = 23

Question 4

Write a program to input three angles of a triangle and check whether a triangle is possible or not. If possible, then check whether it is an acute-angled triangle, right-angled or an obtuse-angled triangle, otherwise display “Triangle not possible”.

Sample inputs: Enter three angles: 40, 50, 90

Sample output: Right-angled triangle

Question 5

A pre-paid taxi charges from the passenger as per the tariff given below:

Distance	Rate
Up to 5 km	Rs. 100
For the next 10 km	Rs. 10 / km
For the next 10 km	Rs. 8 / km
More than 25 km	Rs. 5 / km

Write a program to input the distance covered and calculate the amount paid by the passenger. The program displays the printed bill with the details given below:

Taxi No. _____

Distance covered _____

Amount _____

Question 6

A cloth showroom has announced festival discounts and the gifts on the purchase of items, based on the total cost as given below:

Total Cost	Discount	Gift
Up to Rs. 2000	5%	Calculator
Rs. 2001 to 5000	10%	School Bag
Rs. 5001 to 10000	15%	Wall Clock
Above Rs. 10000	20%	Wristwatch

Write a program to input the total cost. Compute and display the amount to be paid by the customer along with the gift.

Question 7

Using a switch case statement, write a menu-driven program to convert a given temperature from Fahrenheit to Celsius and vice-versa. For an incorrect choice, an appropriate message should be displayed.

Question 8

The volume of solids viz. cuboid, cylinder and cone can be calculated by the formula:

a) Volume of cuboid: l * b * h

b) Volume of cylinder: $\pi r^2 h$

c) Volume of cone: $1/3*\pi r^2 h$

Using switch case statement, write a program to find the volume of different solids by taking suitable variables and data types.

Question 9

Kumar Electronics has announced the following seasonal discounts on purchase of certain items:

Purchase Amount	Discount on Laptop	Discount on Desktop PC
Up to 25000	0.0%	5.0%
25001 to 50000	5.0%	7.5%
50001 to 100000	7.5%	10.0%
More than 100000	10.0%	15.0%

Write a program to input name, amount of purchase and the type of purchase ('L' for Laptop and 'D' for Desktop) by a customer. Compute and print the net amount to be paid by a customer along with his name. Net amount = Amount of purchase – Discount.

Question 10

Write a program to input any 50 numbers (including positive and negative) and perform the following tasks:

a) Count the positive numbers.

b) Count the negative numbers.

c) Sum of positive numbers.

d) Sum of negative numbers.

Question 11

Write a program to display all the buzz numbers between p and q where p < q. A buzz number is the number which either ends with 7 or is divisible by 7.

Question 12

Write a program to input a number and count the number of digits. The program further checks whether the number contains odd number of digits or even number of digits.

Question 13

Write a program to input a number and display the new number after reversing the digits of the original number. The program also displays the absolute difference between the original number and the reversed number.

Question 14

The Greatest Common Divisor (GCD) of two integers is calculated by the continued division method. Input two positive integers and divide the larger number by the smaller, the remainder then divides the previous divisor. The process repeats unless the remainder reaches to zero. The last divisor results in GCD. Display the GCD.

Question 15

Write a program to input a number and evaluate the results based on the number entered by the user:

a) Natural logarithm of the number.

b) Absolute value of the number.

c) Square root of the number.

d) Cube of the number.

e) Random number between 0 and 1.

Question 16

Write a program to find and display the sum of the following series: $s = 1 + 2^2/a + 3^3/a^2 + \ldots$ n terms, where the value of n and a are entered by the user as integers.

Question 17

Write a program to find and display the sum of the following series: $s = x/2 + x/5 + x/8 + x/11 + \ldots + x/20$, where the value of x is entered by the user as an integer.

Question 18

Write a program to calculate and display the factorials of all the numbers between 'm' and 'n' where $m < n$, $m > 0$ and $n > 0$. Hint: Factorial of 5 means $5! = 5 * 4 * 3 * 2 * 1$.

Question 19

Write a menu-driven program to display all prime and non-prime numbers from 1 to 100.
Menu:
Enter 1: to display all prime numbers.
Enter 2: to display all non-prime numbers.

Question 20

Write a program to display the following pattern for n rows, where the value of n is entered by the user:
0
10
101
0101
10101
… N rows

****