Experiment – 5 a)

Aim: Applying Decision Making statements to solve the given problem.

Scenario 1:

A transport company charges the fare according to following table:

Distance	Charges
1-50	8 Rs./Km
51-100	10 Rs./Km
> 100	12 Rs/Km

Ask user to enter the distance and compute the fare.

Python Code:

```
distance = int(input("Enter distance:"))
if distance>=1 and distance<=50:
 fare = distance * 8
elif distance>=51 and distance<=100:
  fare = distance * 10
elif distance>100:
 fare = distance * 12
else:
  print("Invalid fare")
print("The total fare is:",fare)
```

Output:

```
Enter distance:200
The total fare is: 2400
```

Scenario 2:

A function f(x) is defined as follows :

$$f(x) = ax^3 - bx^2 + cx - d, \quad \text{if } x > k$$
$$= 0, \quad \text{if } x = k$$
$$= -ax^3 + bx^2 - cx + d, \quad \text{if } x < k$$

Write a program that reads a, b, c, d, k and x and prints the value of f(x).

Python Code:

```
a = int(input("Enter a:"))
b = int(input("Enter b:"))
c = int(input("Enter c:"))
d = int(input("Enter d:"))
k = int(input("Enter k:"))
x = int(input("Enter x:"))
if x > k:
   fx = a*(x**3) - b*(x**2) + c*x -d
elif x ==k:
  fx =0
elif x < k:
  fx =  -a*(x**3) + b*(x**2) - c*x + d
print(fx)
```

Output:

```
Enter a:1
Enter b:2
Enter c:3
Enter d:4
Enter k:5
Enter x:6
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```

Scenario 3:

A toy vendor supplies three types of toys. The vendor gives a discount as:

Battery Based Toys, Key-based Toys, and Electrical Charging Based Toys. The vendor gives a discount of 10% on orders for battery-based toys if the order is for more than Rs. 1000. On orders of more than Rs. 100 for key-based toys a discount of 5% is given and a discount of 10% is given on orders for electrical charging-based toys of value more than Rs. 500.

Assume that the numeric codes 1,2 and 3 are used for battery-based toys, key-based toys, and electrical charging-based toys respectively. Write a program that reads the product code and the order amount and prints out the net amount that the customer is required to pay after the discount.

Python Code:

```
print("1. For Battery based Toys")
print("2. For Key based Toys")
print("3. Electric chargin based Toys")
opt = int(input("Enter the product code (1,2 or 3)?:"))
amt = int(input("Enter the amount:"))
if opt==1:
   if amt>1000:
      dis = amt * 0.1
   else:
      dis = 0
elif opt==2:
   if amt>100:
      dis = amt * 0.05
   else:
      dis=0
elif opt==3:
   if amt>500:
      dis = amt*0.1
   else:
      dis = 0
else:
   print("Product is not available")
bill_amt= amt - dis
print("Customer has to pay:",bill_amt)
```

Output:

```
1. For Battery based Toys
2. For Key based Toys
3. Electric chargin based Toys
Enter the product code (1,2 or 3)?:2
Enter the amount:1000
Customer has to pay: 950.0
```