**QUESTION 8**

* **CODE :-**

**#(a)**

def generate\_factors(n):

factors = []

for i in range(1, n):

if n % i == 0:

factors.append(i)

return factors

**#(b)**

def is\_prime\_number(n):

if n <= 1:

return False

for i in range(2, int(n\*\*0.5) + 1):

if n % i == 0:

return False

return True

**#(c)**

def is\_perfect\_number(n):

factors = generate\_factors(n)

factor\_sum = sum(factors)

return factor\_sum == n

# Main program

try:

num = int(input("Enter a number: "))

factors = generate\_factors(num)

if is\_prime\_number(num):

print(num, "is a prime number.")

else:

print(num, "is not a prime number.")

if is\_perfect\_number(num):

print(num, "is a perfect number.")

else:

print(num, "is not a perfect number.")

print("Factors:", factors)

except ValueError:

print("Invalid input. Please enter a valid number.")

* **OUTPUT :-**

Enter a number: 1928939

1928939 is not a prime number.

1928939 is not a perfect number.

Factors: [1, 17, 113467]