■ Python Programming Concepts – Quick Notes

■■ Temperature Conversion (Celsius ↔ Fahrenheit)

Formula:
F = (9/5) × C + 32
C = (5/9) × (F – 32)

Example:
C = 100 → F = 212°F
F = 212 → C = 100°C

■ Prime Number Check

A number is **prime** if it is greater than 1 and has no divisors other than 1 and itself.

Python Code:
import math def isprime(n): if n <= 1: return False for i in range(2, int(math.sqrt(n)) + 1): if n % i == 0: return False return True

■ Fibonacci Sequence

Each term is the sum of the two preceding ones, starting from 0 and 1.

Python Code:
def fibonacci(n): seq = [] a, b = 0, 1 for i in range(n): seq.append(a) a, b = b, a + b return seq print(fibonacci(8)) # [0, 1, 1, 2, 3, 5, 8, 13]

■ Leap Year Check

Condition:
A year is a leap year if:
1. It is divisible by 4 and not by 100, OR
2. It is divisible by 400.

Python Code:
def leapyear(year): return (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0) print(leapyear(1900)) # False print(leapyear(2000)) # True

■ Factorial (Recursion)

Definition:
n! = n × (n–1) × (n–2) × … × 1

Python Code:
def fact(n): if n < 0: return "Factorial not defined for negative numbers" elif n == 0 or n == 1:

return 1 else: return n * fact(n - 1) print(fact(5)) # 120

■ These examples cover key Python fundamentals — conditionals, loops, recursion, and mathematical logic. Perfect for quick revision!