ASSIGNMENT OF PYTHON BCA 4th END SEMESTER EXAM

NAME - GITARTHA TALUKDAR

STUDENT ID - CS23BCAGN007

1. WAP Using Python to implement Arithmetic & Quadratic Operations

CODE -

```python
import math
a = 30
b = 5
print("Addition:", a + b)
print("Subtraction:", a - b)
print("Multiplication:", a * b)
print("Division:", a / b)
a = 1
b = -3
c = 2
discriminant = b**2 - 4*a*c
root1 = (-b + math.sqrt(discriminant)) / (2*a)
root2 = (-b - math.sqrt(discriminant)) / (2*a)
print("Roots:",root1,root2)
a = 10
b = 6
```

2. WAP Using Python to implement linear equation

CODE -

```python
def solve_linear_equation(a, b):
    # ax + b = 0
    if a == 0:
        if b == 0:
            return "Infinite solutions (any value of x satisfies the equation)."
        else:
            return "No solution (inconsistent equation)."
    else:
        x = -b / a
        return f"The solution is x = {x}"
```

3. WAP Using mathematical function or equation to give graphical representation like star & graph.

CODE-

```python
import matplotlib.pyplot as plt
import numpy as np
x = np.linspace(-10, 10, 400)
y1 = x**2 - 2*x + 1
y2 = np.sin(x)
plt.figure(figsize=(10, 5))
plt.plot(x, y1, label='y = x² - 2x + 1', color='blue')
plt.plot(x, y2, label='y = sin(x)', color='red')
plt.title("Graph of Quadratic and Sine Functions")
plt.xlabel("x-axis")
plt.ylabel("y-axis")
plt.legend()
plt.grid(True)
plt.tight_layout()
plt.show()
```

4. WAP to implement Functions

Defines a Python function to check for prime numbers.

CODE-

```python
def is_prime(n):
    if n <= 1:
        return False
    for i in range(2, int(n**0.5)+1):
        if n % i == 0:
            return False
    return True

print(is_prime(7))
```

5. WAP using Tkinter make any formatted application according to your ideas.

CODE-