Sheet 10 Modules

1.Write a Python program to use various functions from the math module to perform mathematical operations .Print the following results:

1. Calculate the square root of 100.
2. Print the value of pi.
3. Calculate the sine of 2 radians.
4. Calculate the factorial of 4.

2.Write a Python program that imports specific functions from the math module to perform mathematical operations. Print the following results:

1. Calculate the square root of 16 using the sqrt() function.
2. Round up the value 4.4 to the nearest integer using the ceil() function.
3. Round down the value 4.4 to the nearest integer using the floor() function.
4. Calculate the factorial of 5 using the factorial() function.

3.Write a Python program that imports all functions and constants from the math module to perform mathematical operations. Print the following results:

1. Calculate the square root of 16.
2. Round up the value 4.4 to the nearest integer.
3. Round down the value 4.4 to the nearest integer.
4. Calculate the factorial of 5.

4.Write a Python program that imports the math module and aliases it as mt. Print the following results:

1. Calculate the square root of 16 using the sqrt() function from the mt module.
2. Round down the value 6.4 to the nearest integer using the floor() function from the mt module.

5.Write a Python program that imports the random module to perform random number generation and selection operations. Print the following results:

1. Generate a random integer between 0 and 5 (inclusive) using the randint() function.
2. Generate a random floating-point number between 0 and 1 using the random() function.
3. Generate a random floating-point number between 0 and 100 using the random() function and scaling.
4. Select a random element from the given list [1, 4, True, 800, "python", 27, "hello"] using the choice() function.

6.Write a Python program to calculate the area of a circle with a radius of 4 units using the mathematical constant pi from the math module.

7.Write a Python program to retrieve and print the current time in seconds using the time module.

8.Write a Python program that uses the time module to introduce a delay of 1 second between printing consecutive numbers from 0 to 3.

9.Write a Python script that imports the datetime module and prints the current date and time.

10.Write a Python script that shuffles a list of integers using the random.shuffle() function.

11. How can you efficiently compute the sum of elements in the given list arr using Python's functools.reduce() function along with a lambda function?

12. Find the maximum element in a list using lambda and reduce () function?

13. How can you generate a list of cumulative sums of elements in the provided list arr, utilizing Python's itertools.accumulate() function along with a lambda function?

14.Which function in the math module returns the absolute value of a number?

A) math.abs()

B) math.absolute()

C) math.absval()

D) math.fabs()

15.What does the math.pow(x, y) function do?

A) Returns the product of x raised to the power of y

B) Returns the square root of x

C) Returns the natural logarithm of x

D) Returns x raised to the power of y

16.Which function in the datetime module returns the current date and time?

A) datetime.now()
B) datetime.today()
C) datetime.current()
D) datetime.current_datetime()

17.Which function in the time module returns the current time in seconds since the epoch?

A) time.now()

B) time.current()

C) time.time()

D) time.seconds()

18.What does the time.sleep(seconds) function do?

A) Returns the current time in seconds

B) Pauses the program execution for the specified number of seconds

C) Converts seconds to a formatted time string

D) Returns the time in seconds since the epoch

19.Which function in the random module generates a random floating-point number between 0 and 1?

A) random.random()

B) random.float()

C) random.uniform()

D) random.randfloat()

20.What does the random.choice(seq) function do?

A) Generates a random integer from a specified range

B) Returns a randomly selected element from a sequence

C) Shuffles a sequence randomly

D) Returns a random boolean value