Python Basics Assignment

This notebook contains 20 basic Python questions.
Each question carries **1 mark**. Write your answer in the cell provided.

Question 1

Write a function that returns the square of a number.

```
def square(number):
    return number * number
print(square(6))
def your_function_1():
    pass
```

```
36
```

Question 2

Write a function that checks whether a number is even.

```
def is_even(number):
    return number % 2 == 0
print(is_even(6))
def your_function_2():
    pass
```

```
True
```

Question 3

Write a function to return the maximum of two numbers.

```
def max(number1,number2):
  if number1 > number2:
    return number1
  else:
    return number2
print(max(5,6))
def your_function_3():
    pass
```

```
6
```

Question 4

Write a function to return the factorial of a number.

```
def factorial(number):
  if number == 1:
    return 1
  else:
    return number * factorial(number - 1)
print(factorial(5))
def your_function_4():
    pass
```

```
120
```

Question 5

Write a function to reverse a string.

```
def reverse(string):
  return string[::-1]
print(reverse("hello"))
def your_function_5():
    pass
```

```
olleh
```

Question 6

Write a function to check if a string is a palindrome.

```
def is_palindrome(string):
  return string == string[::-1]
print(is_palindrome("racecar"))
def your_function_6():
    pass
```

```
True
```

Question 7

Write a function to count vowels in a string.

```
def count_vowels(string):
  vowels = "aeiouAEIOU"
  count = 0
  for char in string:
    if char in vowels:
      count += 1
  return count
print(count_vowels("hello"))
def your_function_7():
    pass
```

```
2
```

Question 8

Write a function that returns the sum of a list.

```
def sum_list(list):
  sum = 0
  for num in list:
    sum += num
  return sum
print(sum_list([1,2,3,4,5]))
def your_function_8():
    pass
```

```
15
```

Question 9

Write a function to find the smallest number in a list.

```
def find_smallest(numbers):
    return min(numbers)
numbers = [10, 5, 3, 8, 1]
print(find_smallest(numbers))
def your_function_9():
    pass
```

```
1
```

Question 10

Write a function to remove duplicates from a list.

```
def remove_duplicates(lst):
    return list(set(lst))
numbers = [1, 2, 2, 3, 4, 4, 5]
print(remove_duplicates(numbers))
def your_function_10():
    pass
```

```
[1, 2, 3, 4, 5]
```

Question 11

Write a function to sort a list in ascending order.

```
def sort_ascending(lst):
    return sorted(lst)
numbers = [5, 2, 9, 1, 7]
print(sort_ascending(numbers))
def your_function_11():
    pass
```

```
[1, 2, 5, 7, 9]
```

Question 12

Write a function that returns the length of a string.

```
def string_length(text):
    return len(text)
print(string_length("hello"))
def your_function_12():
    pass
```

```
5
```

Question 13

Write a function to count words in a sentence.

```
def count_words(sentence):
    return len(sentence.split())
print(count_words("hello world"))
def your_function_13():
    pass
```

```
2
```

Question 14

Write a function to convert Celsius to Fahrenheit.

```
def celsius_to_fahrenheit(celsius):
    return (celsius * 9/5) + 32
print(celsius_to_fahrenheit(0))
def your_function_14():
    pass
```

```
32.0
```

Question 15

Write a function to check if a number is prime.

```
def is_prime(number):
    if number < 2:
```

```
        return False
    for i in range(2, int(number ** 0.5) + 1):
        if number % i == 0:
            return False
    return True
print(is_prime(7))
def your_function_15():
    pass
```

```
True
```

Question 16

Write a function to return all even numbers in a list.

```
def get_even_numbers(lst):
    return [num for num in lst if num % 2 == 0]
numbers = [1, 2, 3, 4, 5, 6]
print(get_even_numbers(numbers))
def your_function_16():
    pass
```

```
[2, 4, 6]
```

Question 17

Write a function to return the nth Fibonacci number.

```
def fibonacci(n):
    if n <= 0:
        return "Invalid input"
    elif n == 1:
        return 0
    elif n == 2:
        return 1
    a, b = 0, 1
    for _ in range(2, n):
        a, b = b, a + b
    return b
print(fibonacci(1))
def your_function_17():
    pass
```

```
0
```

Question 18

Write a function to calculate the average of a list.

```
def calculate_average(lst):
    return sum(lst) / len(lst)
numbers = [10, 20, 30, 40]
print(calculate_average(numbers))
def your_function_18():
    pass
```

```
25.0
```

Question 19

Write a function that returns a dictionary of character counts.

```
def character_count(string):
    count = {}
    for char in string:
        if char in count:
            count[char] += 1
        else:
            count[char] = 1
```

```
    return count
print(character_count("hello"))
def your_function_19():
    pass
```

```
{'h': 1, 'e': 1, 'l': 2, 'o': 1}
```

Question 20

Write a function that returns True if all list elements are unique.

```
def all_unique(lst):
    return len(lst) == len(set(lst))
numbers = [1, 2, 3, 4, 5]
print(all_unique(numbers))
def your_function_20():
    pass
```

```
True
```