

# Basic Python Test

Total Marks: 50

Time: 1 Hour

## Instructions:

- Open VS Code and create a new file named `python_test.md`.
  - Copy and paste the following questions into the file.
  - After each question, write the Python code solution.
  - Save the file and submit it.
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## Section A: Multiple Choice Questions

Choose the correct answer:

1. What will be the output of `print(5 // 2)`?
  - a) 2.5
  - b) 2
  - c) 3
  - d) 2.0
2. Which of the following is used to define a block of code in Python?
  - a) Curly braces `{}`
  - b) Square brackets `[]`
  - c) Indentation
  - d) Parentheses `()`
3. What does `list.append(x)` do?
  - a) Adds x to the beginning of the list
  - b) Adds x to the end of the list
  - c) Removes x from the list
  - d) Replaces the first element with x
4. Which of the following is an **immutable** data type in Python?
  - a) List
  - b) Set
  - c) Dictionary
  - d) Tuple
5. What is the correct syntax to open a file in Python for reading?
  - a) `open('file.txt', 'r')`
  - b) `open('file.txt', 'w')`
  - c) `open('file.txt', 'a')`
  - d) `open('file.txt', 'x')`

6. What will be the output of `print(2 * 3 ** 2)`?
    - a) 36
    - b) 18
    - c) 12
    - d) 9
  7. Which operator is used to compare two values in Python?
    - a) =
    - b) ==
    - c) !=
    - d) Both b and c
  8. What is the purpose of `try` and `except` in Python?
    - a) To define a function
    - b) To handle exceptions (errors)
    - c) To create loops
    - d) To check conditions
  9. What is the correct way to create a dictionary in Python?
    - a) `d = {}`
    - b) `d = []`
    - c) `d = ()`
    - d) `d = set()`
  10. Which of the following functions converts a string into a list of words?
    - a) `split()`
    - b) `join()`
    - c) `replace()`
    - d) `find()`
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## Section B: Short Answer Questions

Answer in **1-2 sentences**:

11. What is the difference between `remove()` and `pop()` methods in lists?
  12. What is the purpose of the `pass` statement in Python?
  13. Explain how the `range()` function works with an example.
  14. What is the difference between deep copy and shallow copy in Python?
  15. How do you check if a given key exists in a dictionary?
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### Section C: Coding Questions

Write Python code for the following:

16. Write a Python program to check whether a number is **positive, negative, or zero**.
17. Write a Python program to print all the even numbers between **1 and 50**.
18. Write a Python function to find the **factorial of a given number** using recursion.