# 1) Understanding Computer Components Quiz

**1️) What is the primary function of the CPU in a computer?**

A) Storing data permanently  
B) Managing input and output devices  
C) Executing instructions and processing data  
D) Displaying graphics on the screen

✅ **Answer:** C) Executing instructions and processing data

**2️) Which of the following best describes RAM?**

A) A permanent storage device  
B) A temporary storage that holds currently used programs and data  
C) The main processing unit of the computer  
D) A type of external storage like a USB drive

✅ **Answer:** B) A temporary storage that holds currently used programs and data

**3️) What happens when a computer runs out of RAM?**

A) It crashes immediately  
B) The operating system uses virtual memory on the hard drive or SSD  
C) The CPU stops working  
D) Data is lost permanently

✅ **Answer:** B) The operating system uses virtual memory on the hard drive or SSD

**4️) What is the main function of a computer bus?**

A) To provide power to the CPU  
B) To transport data between different components of the computer  
C) To store information permanently  
D) To manage cooling inside the computer

✅ **Answer:** B) To transport data between different components of the computer

**5) Which of these best describes an operating system?**

A) A physical component of the computer  
B) A program that controls hardware and manages software resources  
C) A type of programming language  
D) A part of the CPU that performs calculations

✅ **Answer:** B) A program that controls hardware and manages software resources

**6) Which type of storage provides the fastest access to data?**

A) Hard Disk Drive (HDD)  
B) Solid State Drive (SSD)  
C) Random Access Memory (RAM)  
D) USB Flash Drive

✅ **Answer:** C) Random Access Memory (RAM)

# 2) Data Storage and Processing Quiz

**1️) What is the smallest unit of data in a computer?**

A) Byte  
B) Bit  
C) Word  
D) Kilobyte

✅ **Answer:** B) Bit

**2) How many bits are in a byte?**

A) 4  
B) 8  
C) 16  
D) 32

✅ **Answer:** B) 8

**3️) Which of the following best describes a word in computing?**

A) A single letter stored in memory  
B) A group of bits processed as a unit by the CPU  
C) A large text file stored on disk  
D) A single pixel on a display

✅ **Answer:** B) A group of bits processed as a unit by the CPU

**5️) How many different values can be represented by a single byte?**

A) 16  
B) 128  
C) 256  
D) 512

✅ **Answer:** C) 256 (values range from 0 to 255 in an 8-bit system)

**6) If a computer uses a 32-bit word size, how many bytes make up a word?**

A) 2  
B) 4  
C) 8  
D) 16

✅ **Answer:** B) 4 (since 32 bits = 4 bytes)

# 3) Variables, Data Types, and Memory Management Quiz

**1️) What is a variable in programming?**

A) A fixed value that cannot be changed  
B) A name that stores a reference to a value in memory  
C) A type of function used in calculations  
D) A part of the CPU that performs arithmetic operations

✅ **Answer:** B) A name that stores a reference to a value in memory

**2️) Which of the following is an example of a valid variable name in Python?**

A) 2variable  
B) my-variable  
C) my\_variable  
D) def

✅ **Answer:** C) my\_variable (Python allows letters, numbers, and underscores but cannot start with a number or use keywords)

**3️) What is the primary difference between int and float data types in Python?**

A) int is used for text, while float is used for numbers  
B) int represents whole numbers, while float represents decimal numbers  
C) float uses less memory than int  
D) int can store larger values than float

✅ **Answer:** B) int represents whole numbers, while float represents decimal

**4️) What is the result of the following Python code?**

x = "10"

y = 5

z = x + str(y)

print(z)

A) 15  
B) 105  
C) TypeError  
D) "105"

✅ **Answer:** D) "105" (String concatenation occurs instead of addition)

**5) What is the key difference between dynamically typed and statically (strictly) typed languages?**

A) Dynamically typed languages require explicit type declarations, while statically typed languages do not.  
B) Statically typed languages perform type checking at runtime, while dynamically typed languages do it at compile time.  
C) Dynamically typed languages determine variable types at runtime, while statically typed languages require type definitions before compilation.  
D) Statically typed languages allow changing a variable’s type after assignment, while dynamically typed languages do not.

✅ **Answer:**  
**C) Dynamically typed languages determine variable types at runtime, while statically typed languages require type definitions before compilation.**

**6) Why do rounding errors occur when using floating-point numbers in programming?**

A) Because floating-point numbers are stored as fractions with infinite precision.  
B) Because some decimal values cannot be represented exactly in binary.  
C) Because the CPU randomly changes floating-point values to save memory.  
D) Because floating-point numbers are stored as integers internally.

✅ **Answer:**  
**B) Because some decimal values cannot be represented exactly in binary.**

# 4) Performing Calculations in Python Quiz

**1️) Which of the following operators has the highest precedence?**

A) + (Addition)  
B) \* (Multiplication)  
C) \*\* (Exponentiation)  
D) - (Subtraction)

✅ **Answer:** **C) \*\* (Exponentiation has the highest precedence)**

**2) What will the following Python code output?**

print(round(2.675, 2))

A) 2.67  
B) 2.68  
C) 2.675  
D) 2.66

✅ **Answer:** **B) 2.68**  
💡 (Due to floating-point precision, rounding can sometimes give unexpected results.)

**3) How can you get the square root of a number in Python?**

A)

Import math

sqrt(x)

B)

x \*\* 2

C)

import math

math.sqrt(x)

D)

math.root(x, 2)

✅ **Answer:** **C)**

import math

math.sqrt(x)

(The math library provides a function for square root.)

**4) What will the following Python code output?**

print(int("10") + float("5.5"))

A) 105.5  
B) 15.5  
C) 10.55  
D) Error

✅ **Answer:** **B) 15.5** (The string "10" is converted to an int, and "5.5" is converted to a float, then added. The final result being a float.)

**5) What is the result of the following string operation?**

print("Python" + 3)

A) Python3  
B) PythonPythonPython  
C) Python Python Python  
D) Error

✅ **Answer:** **B) Error (Python is unsure whether addition or concatenation is being attempted)**

**6) What will the following Python code output?**

print(3 + 4 \* 2)

A) 14  
B) 11  
C) 10  
D) 8

✅ **Answer:** **B) 11** (\* has higher precedence than +, so 4 \* 2 is evaluated first.)

# 5) Data Containers in Python Quiz

**1️) What is the key difference between a list and a tuple in Python?**

A) A list is immutable, while a tuple is mutable.  
B) A tuple is immutable, while a list is mutable.  
C) Lists can only store numbers, while tuples can store any type.  
D) Tuples use less memory than lists because they only store integers.

✅ **Answer:** **B) A tuple is immutable, while a list is mutable.**

**2️) What will the following Python code output?**

my\_list = [1, 2, 3]

my\_list.append(4)

print(my\_list)

A) [1, 2, 3]  
B) [1, 2, 3, 4]  
C) (1, 2, 3, 4)  
D) Error

✅ **Answer:** **B) [1, 2, 3, 4]** (append() adds an element to the end of a list.)

**3) What is the output of the following Python code?**

fruits = {"apple", "banana", "cherry", "apple"}

print(fruits)

A) {'apple', 'banana', 'cherry', 'apple'}

B) {'apple', 'banana', 'cherry'}

C) ['apple', 'banana', 'cherry']

D) Error

✅ Answer: B) {'apple', 'banana', 'cherry'} (Sets do not allow duplicate values.)

**4) Which sorting method returns a new sorted list?**

A) sorted(my\_list)  
B) my\_list.sort()  
C) my\_list.order()  
D) arrange(my\_list)

**✅ Answer: A) sorted(my\_list) (returns a new sorted list. while my\_list.sort() Modifies the list in place,)**

**5) What will the following code output?**

set1 = {1, 2, 3}

set2 = {2, 3, 4}

print(set1.intersection(set2))

A) {1, 2, 3, 4}  
B) {2, 3}  
C) {1, 4}  
D) Error

**✅ Answer: B) {2, 3} (The & operator finds the intersection of two sets.)**

# 6) Flow Control in Python Quiz

**1️) What will the following Python code output?**

x = 10

if x > 5:

print("Greater")

else:

print("Smaller")

A) Greater  
B) Smaller  
C) Error  
D) Nothing

**✅ Answer: A) Greater (Since 10 > 5, the if condition is True, so "Greater" is printed.)**

**2) How many times will the following loop execute?**

for i in range(3):

print(i)

A) 2  
B) 3  
C) 4  
D) Infinite

**✅ Answer: B) 3 (The loop runs for i = 0, 1, 2, so it executes three times.)**

**3) What is the output of the following Python code?**

x = 0

while x < 5:

x += 2

print(x)

A) 4  
B) 5  
C) 6  
D) Error

**✅ Answer: C) 6 (The loop increments x by 2 each time, stopping when x = 6.)**

**4) Which statement is used to handle exceptions in Python?**

A) catch  
B) try-except  
C) throw  
D) error-handler

✅ **Answer:** **B) try-except** (Python uses try to test code and except to handle exceptions.)

**5) What will the following Python code output?**

try:

print(1 / 0)

except ZeroDivisionError:

print("Cannot divide by zero")

finally:

print("Done")

A) Cannot divide by zero  
B) Done  
C) Cannot divide by zero Done  
D) Error

✅ **Answer:** **C) Cannot divide by zero Done** (The finally block **always** runs, even after an exception.)

# 7) Structuring and Organizing Code in Python Quiz

**1️) What will the following Python code output?**

def my\_function():

x = 10

print(x)

A) 10  
B) None  
C) Error  
D) 0

✅ **Answer:** **C) Error** (The variable x is **local** to my\_function() and cannot be accessed outside.)

**2) Which statement correctly imports only the sqrt function from the math module?**

A) import math.sqrt  
B) from math import sqrt  
C) import sqrt from math  
D) math import sqrt

✅ **Answer:** **B) from math import sqrt** (This imports only the sqrt function.)

**3) What is the difference between import module and from module import function?**

A) No difference  
B) import module imports everything, while from module import function imports a specific function  
C) import module is faster than from module import function  
D) from module import function requires parentheses

✅ **Answer:** **B) import module imports everything, while from module import function imports a specific function**

**4) What is the output of the following code?**

def add(a, b=5):

return a + b

print(add(3))

A) 3  
B) 8  
C) 5  
D) Error

✅ **Answer:** **B) 8** (b has a **default value** of 5, so 3 + 5 = 8.)

**5) What will the following program print?**

def calculator(num1, num2):

first\_value = num1 + 7

second\_value = num2 - 6

return first\_value

calculator(13, 10)

A. 4

B. 20

C. 24

D. None of the above.

✅ **Answer:** **D) None of the above** (the function returns 4 but there is no print statement.)