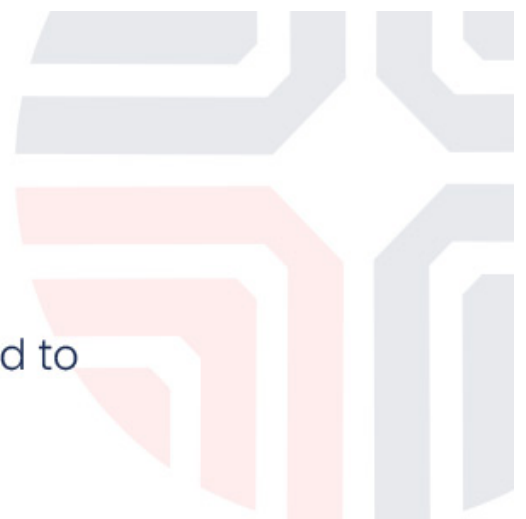Python

CERTIFICATE
OF ACHIEVEMENT

This certificate is proudly presented to

Sisipho Kanana

> For: **Python**

> With a score of: **15/30 (50%)**

> Date: **November 1, 2024**

CAPACITI

Report Summary

Name	:	**Sisipho Kanana**
Your Score	:	15 out of 30 (50%)
Correct Answers	:	15 Questions
Incorrect Answers	:	15 Questions
Unanswered	:	0 Questions
Required Passing Grade (%)	:	50%
Time Taken	:	14 mins 26 secs
Date	:	Nov 01, 2024
Your Result	:	Pass
Email	:	sisipho.kanana@capaciti.org.za

Your Answers

Correct

Q1) What is the correct way to declare a variable in Python?

A. var x = 5;

B. variable x = 5;

C. x = 5; (Your Answer)(Correct)

D. $x = 5;

Explanation:In Python, variables are declared simply by assigning a value to them. Option C 'x = 5;' is the correct way to declare a variable in Python.

Correct

Q2) Which of the following data types is mutable in Python?

A. int

B. str

C. list (Your Answer)(Correct)

D. tuple

Explanation:Lists are mutable in Python, meaning you can change the elements within a list after it has been created.

Incorrect

Q3) What is the result of 3 + 5 * 2 in Python?

A. 16 (Your Answer)(Incorrect)

B. 13

C. 11

D. 18 (Correct)

Explanation:The operator precedence in Python follows the PEMDAS rule (Parentheses, Exponents, Multiplication and Division (from left to right), Addition and Subtraction (from left to right)). So, 5 * 2 is calculated first giving 10, and then 3 + 10 equals 13.

Incorrect

Q4)   Which control structure is used for iterative execution in Python?

A.   if-else (Your Answer)(Incorrect)

B.   for loop (Correct)

C.   while loop

D.   switch-case

Explanation:A 'for loop' is used in Python for iterative execution. It executes a block of code repeatedly for a specified number of times.

Incorrect

Q5)   Which data structure in Python does not allow duplicate elements?

A.   list

B.   tuple (Your Answer)(Incorrect)

C.   dictionary

D.   set (Correct)

Explanation:Sets in Python do not allow duplicate elements. Each element in a set must be unique.

Correct

Q6)   What is the correct way to define a variable in Python?

A.   variable = value (Your Answer)(Correct)

B.   value = variable

C.   var variable = value

D.   value var = variable

Explanation:In Python, variables are defined by assigning a value to them using the = operator. The correct syntax is variable = value.

Correct

Q7)   Which data type is represented by True or False in Python?

A.   int

B.   bool (Your Answer)(Correct)

C.   str

D.   float

Explanation:Boolean data type is represented by True or False in Python. It is used for logical operations.

Incorrect

Q8) What will be the output of the code snippet: print(7 // 2)?

A.   3.5 (Your Answer)(Incorrect)

B.   3 (Correct)

C.   4

D.   3.0

Explanation:// is the floor division operator in Python which performs integer division. So, 7 // 2 will output 3.

Correct

Q9) Which control structure is used to execute a block of code multiple times in Python?

A.   if-else

B.   for loop (Your Answer)(Correct)

C.   while loop

D.   switch-case

Explanation:In Python, a for loop is used to execute a block of code multiple times. It iterates over a sequence of elements.

Correct

Q10) What is the correct way to define a function in Python?

A.   def my_function(): (Your Answer)(Correct)

B.   function my_function():

C.   define my_function():

D.   method my_function():

Explanation:In Python, functions are defined using the def keyword followed by the function name and parentheses. For example, def my_function():

Correct

Q11) Which data structure in Python is mutable and ordered?

A.   list (Your Answer)(Correct)

B.   dictionary

C.   set

D. tuple

Explanation:Lists in Python are mutable and ordered collections of elements. They can be changed after creation and retain the order of elements.

Incorrect

Q12) What is the correct way to access a value in a dictionary in Python?

A. dict[key] (Correct)

B. dict.value(key) (Your Answer)(Incorrect)

C. dict.key()

D. dict[key].value()

Explanation:In Python dictionaries, values are accessed by providing the key in square brackets after the dictionary name. For example, dict[key] will return the corresponding value.

Incorrect

Q13) Which data structure in Python does not allow duplicate elements?

A. list

B. dictionary (Your Answer)(Incorrect)

C. tuple

D. set (Correct)

Explanation:Sets in Python are unordered collections of unique elements. They do not allow duplicate values to be stored.

Incorrect

Q14) What is the purpose of importing a library in Python?

A. To define variables

B. To perform mathematical operations

C. To reuse code written by others (Correct)

D. To create new data structures (Your Answer)(Incorrect)

Explanation:Importing a library in Python allows you to reuse code and functionality written by others. It helps in extending the capabilities of Python.

Correct

Q15) Which library in Python is commonly used for data manipulation and analysis?

A.   numpy (Your Answer)(Correct)

B.   random

C.   datetime

D.   os

Explanation:NumPy is a widely used library in Python for numerical computing. It provides support for large multidimensional arrays and matrices, along with a collection of mathematical functions to operate on these arrays.

Incorrect

Q16) What is the result of 13 // 5 in Python?

A.   2

B.   2.6

C.   3 (Correct)

D.   2.5 (Your Answer)(Incorrect)

Explanation:The '//' operator in Python is used for floor division, which means it rounds down the result to the nearest whole number. In this case, 13 // 5 results in 3.

Correct

Q17) Which data type is mutable in Python?

A.   int

B.   list (Your Answer)(Correct)

C.   tuple

D.   str

Explanation:Lists in Python are mutable, meaning elements can be changed, added, or removed after the list is created.

Correct

Q18) What is the output of 'Hello' + 'World' in Python?

A.   'HelloWorld' (Your Answer)(Correct)

B.   10

C.   'Hello World'

D.   Error

Explanation:When two strings are concatenated in Python using the '+' operator, they are joined together to form a single string. Therefore, 'Hello' + 'World' results in 'HelloWorld'.

Incorrect

Q19) Which data structure in Python does not allow duplicate elements?

A.   list

B.   tuple

C.   set (Correct)

D.   dictionary (Your Answer)(Incorrect)

Explanation:Sets in Python are unordered collections of unique elements. They do not allow duplicate values.

Incorrect

Q20) What is the correct way to access the value 'apple' from the dictionary {'fruit': 'apple', 'color': 'red'}?

A.   dict['fruit']

B.   dict[0] (Your Answer)(Incorrect)

C.   dict.get('apple')

D.   dict.get('fruit') (Correct)

Explanation:To access a value from a dictionary in Python, you need to use the key associated with that value. In this case, 'dict.get('fruit')' will return 'apple'.

Correct

Q21)

Correct

Q22) Which of the following is not a valid variable name in Python?

A.   my_var

B.   _var

C.   2var (Your Answer)(Correct)

D.   Var2

Explanation:Variable names in Python cannot start with a number. Therefore, '2var' is not a valid variable name.

Incorrect

Q23) What will the 'pop()' method do on an empty list in Python?

A.   Return None

B.   Raise an error (Correct)

C.   Return an empty list (Your Answer)(Incorrect)

D.   Delete the list

Explanation:The 'pop()' method in Python is used to remove and return an element from a list. When called on an empty list, it will raise an IndexError.

Correct

Q24) What is the correct way to define a function in Python?

A.   function my_function():

B.   def my_function(): (Your Answer)(Correct)

C.   define my_function():

D.   fun my_function():

Explanation:In Python, functions are defined using the 'def' keyword followed by the function name. Therefore, the correct way to define a function is 'def my_function():'.

Incorrect

Q25) Which of the following is not a valid data type in Python?

A.   int

B.   float

C.   char (Correct)

D.   complex (Your Answer)(Incorrect)

Explanation:In Python, there is no data type called 'char'. Characters are represented as strings in Python.

Incorrect

Q26) What will be the output of the following code snippet: print([x**2 for x in range(5)])?

A.   [1, 4, 9, 16, 25]

B.   [0, 1, 4, 9, 16] (Correct)

C.   [0, 1, 2, 3, 4] (Your Answer)(Incorrect)

D.   [5, 4, 3, 2, 1]

Explanation:The code snippet uses a list comprehension to generate a list of squares of numbers from 0 to 4. Therefore, the output will be '[0, 1, 4, 9, 16]'.

Correct

Q27) Which library in Python is commonly used for data manipulation and analysis?

A.   numpy (Your Answer)(Correct)

B.   random

C.   json

D.   datetime

Explanation:Numpy is a popular library in Python used for numerical computing. It provides support for large, multi-dimensional arrays and matrices, along with a collection of mathematical functions to operate on these arrays.

Incorrect

Q28) In Python, how do you create a tuple with a single element?

A.   (1,) (Correct)

B.   (1) (Your Answer)(Incorrect)

C.   (1, 2)

D.   1,

Explanation:To create a tuple with a single element in Python, you need to include a comma after the element. Therefore, the correct way is '(1,)'.

Correct

Q29) Which data structure in Python maintains its elements in a sorted order?

A.   list

B.   tuple

C.   dictionary

D.   set (Your Answer)(Correct)

Explanation:Sets in Python do not preserve the order of elements as they are unordered collections. If you need to maintain elements in a sorted order, you can use data structures like lists or tuples.

Incorrect

Q30) What will be the output of the following code snippet: print('abc'.replace('a', 'z', 1))?

A. 'zbc' (Correct)

B. 'zbc' (Your Answer)(Incorrect)

C. 'zaz'

D. 'zbc'

Explanation:The 'replace()' method in Python is used to replace occurrences of a substring in a string. Passing the 3rd argument '1' will perform the replacement on the first occurrence only. Therefore, the output will be 'zbc'.

Q30) What will be the output of the following code snippet: print('abc'.replace('a', 'z', 1))?

A. 'zbc' (Correct)

B. 'zbc' (Your Answer)(Incorrect)

C. 'zaz'

D. 'zbc'