



## CLASS 9 Worksheet

### ARTIFICIAL INTELLIGENCE-CHAPTER 5

#### INTRODUCTION TO PYTHON

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| Q.1-  | What is the role of Python Interpreter ?                                                                                                                                                                                                                                                                                                                                                                                            |
| Ans.  | Python Interpreter- It is a computer program that executes code written in python. Python interpreter takes an interactive command and executes it.                                                                                                                                                                                                                                                                                 |
| Q.2-  | Why we use python in AI ?                                                                                                                                                                                                                                                                                                                                                                                                           |
| Ans.  | Python has rich library, it is also object oriented, easy to program. It can be also used as frontend language. That's why it is used in artificial intelligence.                                                                                                                                                                                                                                                                   |
| Q.3-  | Write any 4 features of Python.                                                                                                                                                                                                                                                                                                                                                                                                     |
| Ans.  | Features-<br>1)No Declaration required (2) Inbuilt OOP support/Library (3)Less Code<br>(4)Ease of learning (5)Platform independent (6) Non restrictive syntax.                                                                                                                                                                                                                                                                      |
| Q.4-  | What is Python and its applications?                                                                                                                                                                                                                                                                                                                                                                                                |
| Ans.  | Python is a widely-used, interpreted, object-oriented, and high-level programming language with dynamic semantics, used for general-purpose programming.<br><b>Applications for Python</b><br>Web Development.<br>Game Development.<br>Machine Learning and Artificial Intelligence.<br>Data Science and Data Visualization.<br>Desktop GUI.<br>Web Scraping Applications.                                                          |
| Q.5-  | What do you understand by data types? Explain numeric data types in brief.                                                                                                                                                                                                                                                                                                                                                          |
| Ans.  | <b>Data type-</b> <b>Data type</b> is an attribute associated with a piece of data that tells a computer system how to interpret its value.<br><b>Numeric data types</b> are numbers stored in database columns. These data types are typically grouped by: Exact numeric types, values where the precision and scale need to be preserved. The exact numeric types are INTEGER , BIGINT , DECIMAL , NUMERIC , NUMBER , and MONEY . |
| Qn.6- | Who was created Python programme?                                                                                                                                                                                                                                                                                                                                                                                                   |
| Ans.  | Guido van Rossum.                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Q.7-  | What is Variable in Python? Give example.                                                                                                                                                                                                                                                                                                                                                                                           |
| Ans.  | A Python variable is a reserved memory location to store values. In other words, a variable in a python program gives data to the computer for processing.<br>Examples:-<br>Numbers, List, Tuple, Strings, Dictionary, etc.                                                                                                                                                                                                         |

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| Q.8-  | Explain String in Python with the help of example.                                                                                                                                                                                                                                                                                                                    |
| Ans.  | A string is a series of characters. In Python, anything inside quotes is a string. And you can use either single quotes or double quotes.<br>For example: message = 'This is a string in Python' message = "This is also a string"                                                                                                                                    |
| Q.9-  | Write any four standard data types of python .                                                                                                                                                                                                                                                                                                                        |
| Ans.  | 1. Numeric 2. String. 3. List. 4.Tuple 5. Set.6. Dictionary.                                                                                                                                                                                                                                                                                                          |
| Q.10- | What are comments in python ? List down the various types of comments.                                                                                                                                                                                                                                                                                                |
| Ans.  | Comments in Python are the lines in the code that are ignored by the compiler during the execution of the program. Comments are non-executable statements in Python. It means neither the python compiler nor the PVM will execute them.<br>There are three types of comments in Python –<br>1. Single line Comments<br>2.Multiline Comments<br>3. Docstring Comments |
| Q.11- | What are the different modes for coding in python?                                                                                                                                                                                                                                                                                                                    |
| Ans.  | In the Python programming language, there are two ways in which we can run our code:<br>1. Interactive mode<br>2. Script mode                                                                                                                                                                                                                                         |
| Q.12- | What is the use of Arithmetic Operators in Python? Write any four arithmetic operators.                                                                                                                                                                                                                                                                               |
| Ans.  | Arithmetic operators are used to perform mathematical operations like addition, subtraction, multiplication and division.                                                                                                                                                                                                                                             |
| Q.13- | Why is python the preferred programming language for AI?                                                                                                                                                                                                                                                                                                              |
| Ans.  | Because of its features like:<br>1. Standard built in Library, Less Code,<br>2. Ease of learning,<br>3. Platform independent,<br>4. Massive Community Support,<br>5. Data Generation,<br>6. More effective algorithm,<br>7. Interpretive run time support                                                                                                             |
| Q.14- | What are data types in python. Give some example of data types.                                                                                                                                                                                                                                                                                                       |
| Ans.  | Data types are the classification or categorization of data items. It represents the kind of value that tells what operations can be performed on a particular data.<br>1. Example of data types<br>2. Numeric<br>3. Sequence Type<br>4. Boolean<br>5. Set<br>6. Dictionary                                                                                           |

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| Q.15- | Write a Python Code to find multiplication of two numbers. Display the result.                                                                                                                      |                                                                                                                            |
| Ans.  | <pre>a=4 b=2 multi=a*b print(multi)</pre> <b>Output</b><br>8                                                                                                                                        |                                                                                                                            |
| Q.16- | Sh. Suresh has written following python code. This code is showing error,help Sh. Suresh to rectify the error. Underline the error and rewrite the code.<br><pre>a=10 20=b a+b=sum show (sum)</pre> |                                                                                                                            |
| Ans.  | Correct Code-<br><pre>a=10 b=20 sum=a+b print(sum)</pre>                                                                                                                                            |                                                                                                                            |
| Q.17- | Write the output of the following python statements.<br>(i) print('Good Morning, India')<br>(ii) print(0.25*0.5*2.5)<br>(iii) print (250+350*2//5)                                                  |                                                                                                                            |
| Ans.  | (i) Good Morning, India<br>(ii) 0.3125<br>(iii) 390                                                                                                                                                 |                                                                                                                            |
| Q.18- | Identify the data type.<br>(i) dob = [19,"January",1990]<br>(ii) t = (5,'program',2.5)                                                                                                              |                                                                                                                            |
| Ans.  | (i) Lists<br>(ii) Tuple                                                                                                                                                                             |                                                                                                                            |
| Q.19- | Match the Column 'A' with Column 'B'                                                                                                                                                                | Column B                                                                                                                   |
|       | Column A                                                                                                                                                                                            |                                                                                                                            |
|       | (i) + (Addition )                                                                                                                                                                                   | (i) Comparison operators                                                                                                   |
|       | (ii) = =                                                                                                                                                                                            | (ii) Logical operators                                                                                                     |
|       | (iii) NOT                                                                                                                                                                                           | (iii) Assignments Operators                                                                                                |
|       | (iv) + = (Add AND)                                                                                                                                                                                  | (iv) Arithmetic operators                                                                                                  |
| Ans.  | Column A<br>(i) + (Addition )<br>(ii) = =<br>(iii) NOT<br>(iv) + = (Add AND)                                                                                                                        | Column B<br>(i) Arithmetic operators<br>(ii) Comparison operators<br>(iii) Logical operators<br>(iv) Assignments Operators |
| Q.20- | What output given by the following python code?<br><pre>print("Good","Morning","India")</pre>                                                                                                       |                                                                                                                            |

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| Ans.  | Good Morning India                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Q.21- | Write the output of the following python statements 5<br>i) <code>print('Sunday' + 'Monday' + 'Holiday')</code><br>ii) <code>print(16 * 4)</code><br>iii) <code>print(1998 - 1964)</code><br>iv) <code>print(100 // 25)</code><br>v) <code>print(390 + 27 + 63 + 71)</code>                                                                                                                                                                                                                                                          |
| Ans.  | i. SundayMondayHoliday<br>ii. 64<br>iii. 34<br>iv. 4<br>v. 551                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Q.22- | Write the Boolean value (“True” or “False”) returned by the following relational expression in Python.<br>a. <code>10140 &gt; 10104</code><br>b. <code>356 &lt; 78</code><br>c. <code>'Lion'=='Leon'</code>                                                                                                                                                                                                                                                                                                                          |
| Ans.  | a) True<br>b) False<br>c) False                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Q.23- | What output given by the following Python code?<br><code>SP = 3126</code><br><code>CP = 2500</code><br><code>x = SP - CP</code><br><code>if x &gt; 0:</code><br><code>print('Profit gain')</code><br><code>else:</code><br><code>print('Loss suffer')</code>                                                                                                                                                                                                                                                                         |
| Ans.  | Profit gain                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Q.24- | Identify and write the name of variables used in the following python program .<br><code>player_name = 'Sachin'</code><br><code>century = 51</code><br><code>runs = 15000</code><br><code>print('Players name is ', player_name)</code><br><code>print('He made', century, 'centuries')</code><br><code>print(runs, 'Runs is the world record')</code><br><code>book = 'Autobiography'</code><br><code>price = 450</code><br><code>print('lets purchase the book', book)</code><br><code>print('Its cost only ', price, 'Rs')</code> |
| Ans.  | <code>player_name</code> , <code>century</code> , <code>runs</code> , <code>book</code> , <code>price</code>                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Q.25- | What is python IDEs. Write some Python IDEs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

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| Ans.  | <p>It is specially designed for software development that consists of several tools which is used for developing and testing the software.</p> <p>There are some Python IDEs</p> <p>IDLE python</p> <p>PyCharm</p> <p>Spyder</p> <p>PyDev</p> <p>Atom</p> <p>Microsoft Visual Studio</p> <p>Jupyter Notebook</p> |
| Q.26- | <p>Find the output of given program.</p> <p>(1) L1 = ["John", 102, "USA"]</p> <p>(2) T2 = ("Apple", "Banana", "Orange")</p> <p>print(type(L1))</p> <p>print(type(T2))</p>                                                                                                                                        |
| Ans.  | <p>&lt;class 'list'&gt;,<br/>&lt;class 'Tuple'&gt;</p>                                                                                                                                                                                                                                                           |