B.C.A. Part—II (Semester—III) (CBCS) Examination

3 BCA 4

PYTHON PROGRAMMING

Time : Three Hours] [Maximum Marks : 80

Note :— Question No. 1 carries **20** marks and all other carry equal **(12)** marks.

1. (A) Fill in the blanks :

(1) Python is a _____ programming language.

(2) To create a string in Python, you use the _____ function.

(3) To create a dictionary in Python, you use the _____ keyword.

(4) The two main types of files are text and _____ files.

(5) To create a class in Python, you use the _____ keyword. 5×1=5

(B) Choose Correct Alternative :

(1) Which of the following is a valid Python identifier ?

(a) my_variable (b) 1 variable

(c) variable-name (d) All of the above

(2) What is the output of the following Python code ?

```
print(1 + 2 * 3)
```

(a) 7 (b) 9

(c) 11 (d) 13

(3) Which of the following is a valid Python string operation ?

(a) + (b) –

(c) * (d) All of the above

(4) What is the output of the following Python code ?

```
my_string = "Hello, world!"
print(my_string.split(" "))
```

(a) ["Hello", "world!"]

(b) "Hello, world!"

(c) ["H", "e", "l", "l", "o", ",", " ", "w", "o", "r", "l", "d", "!"]

(d) None of the above

(5) Which of the following is a valid Pythom dictionary method ?

(a) get() (b) append()

(c) sort() (d) reverse()

(6) What is the output of the following Python code ?

```
my_dictionary = {"name" : "Alice", "age" : 25}
print(my_dictionary.keys())
```

(a) `["name", "age"]` (b) `{"name" : "Alice", "age" : 25}`

(c) `"name"` (d) `None of the above`

(7) Which of the following is NOT a type of file ?

(a) Text file (b) Binary file

(c) CSV file (d) JSON file

(8) Which of the following functions is used to read the contents of a file into a string ?

(a) read() (b) readline()

(c) write() (d) open()

(9) What is the purpose of the_init_() method in Python ?

(a) To initialize the attributes of an object (b) To return an object from a class

(c) To define the behaviour of an object (d) All of the above

(10) What is the difference between a class attribute and a data attribute in Python ?

(a) A class attribute is shared by all instances of a class, while a data attribute is unique to each instance of a class

(b) A class attribute is immutable, while a data attribute is mutable

(c) A class attribute is a method, while a data attribute is a variable

(d) None of the above 10×1=10

(C) Answer the following in **one** sentence :

(1) What are the four pillars of object-oriented programming ?

(2) What are the difference between a text file and a binary file ?

(3) What are the time complexity of accessing an element in a dictionary ?

(4) What are the space complexity of a tuple ?

(5) What are the name of the Python module that can be used to read and write CSV files ? 5×1=5

2. (A) Explain Type conversion in Python with examples. 4

(B) Differentiate between user-defined function and built-in functions. 8

OR

3. (A) Explain the built-in functions with examples in Python. 8

(B) Write a Python function named area that finds the area of a pentagon. 4

4. (A) How do you add an element to the beginning of a list in python ? 4

(B) Explain the process of creating and storing strings in Python. How are strings different from other data types, and how can you use variables to store and manipulate strings effectively ? 8

OR

5. (A) Explore any four string methods available in Python. And Describe how methods like upper( ), split( ), and join( ) can be used to transform and manipulate strings providing examples of their usage. 8

(B) What is the purpose of string indexing in Python ? 4

6. (A) What is the key characteristic of a tuple in Python ? 4

(B) Explain the concept of tuples in Python. What sets tuples apart from lists, and why might you choose to use tuples instead of lists in certain situations ? Provide examples of when tuples are advantageous in programming. 8

OR

7. (A) Discuss the methods provided by sets in Python. Explain how the add(), remove(), and union() methods function, and provide examples to show how these methods can be used to manipulate sets effectively. 8

(B) What is a frozen set in Python ? 4

8. (A) Define file and explain the different types of files. 4

(B) Write a program that reads the contents of the file and counts the occurrences of each letter. Prompt the user to enter the filename. 8

OR

9. (A) Write a program that prompts the user to enter a text filename and displays the number of vowels and consonants in the file. 8

(B) Write a program to get the file size of a plain text file. 4

10. (A) Explain how to create object in Python ? 4

(B) Differentiate between class attributes and data attributes. 8

OR

11. (A) Examine the different types of inheritances with an example. 8

(B) Explain Magic Method. 4