Seat No. : 270

OB-118

October-2019

B.C.A., Sem.-V

CC-302 : Python Programming
(New Course)

Time : 2.30 Hours] **[Max. Marks : 70**

1. (A) Answer the following :
   (i) Discuss in brief Python Programming language. Also, discuss features of Python. **7**
   (ii) Differentiate between Java and Python. **7**

   OR

   (i) Discuss Built-in datatypes in python.
   (ii) What is Python Virtual Machine ? Also, discuss the flavours of python. **4**

   (B) Answer any **four** :
   (1) _____ operators compare the memory locations of two objects.
   (2) Command line arguments are stored by default in the form of strings in a list with the name _____.
   (3) A _____ contains a group of elements which can be of different types.
   (4) A _____ is an unordered collection of elements in python.
   (5) In python, all the objects are stored in a separate memory called _____.
   (6) _____ is a module in Python that is useful to delete objects from memory which are not used in the program.

2. (A) Answer the following :
   (i) What is an array in Python ? State and explain the advantages of using an array in python. **7**
   (ii) What are dictionaries in Python ? Explain the following methods to process dictionaries :
   copy(), fromkeys(), items(), setdefault(), update() **7**

   OR

   (i) Explain the concept of function decorator giving suitable example. Write the steps involved in creation of decorator.
   (ii) Explain the concept of function in Python giving suitable example. Also differentiate between Function and a method. **4**

   (B) Answer any **four** :
   (1) _____ function removes the last item from the array.
   (2) _____ arguments identify the parameters by their name in functions.
   (3) Anonymous functions are defined using the keyword _____.
   (4) A _____ is similar to an array, but it can store different types of elements.
   (5) _____ method returns how many times an element is found in a tuple.
   (6) A _____ represents a group of elements arranged in the form of key-value pairs.

3. (A) Answer the following :

(i) Explain Instance Methods, Class Method and Static Methods in detail giving suitable example. 7

(ii) Explain different types of inheritance giving suitable program as example. 7

OR

(i) What is polymorphism ? Explain Duck Typing Philosophy of Python and Operator overloading.

(ii) What is a class ? Discuss the following concepts with respect to a class in Python.

- The self variable
- Constructor
- Instance variables

(B) Answer any **three** : 3

(1) _____ variables are the variables whose only single copy is available to all the instances of the class.

(2) _____ is a built-in method which is useful to call the super class constructor or methods from the sub class.

(3) Starting from the current class, searching in parent classes in depth-first, left to right fashion without searching the same class twice is called _____.

(4) If a method is written such that it can perform more than one task, it is called _____.

(5) Instance methods use _____ as first default parameter.

4. *(A)* Answer the following :

(i) What are exceptions in Python ? Discuss the Exception handling mechanism giving suitable example. 7

(ii) How can we connect MySQL with Python and insert a row into a table ? Explain giving suitable example. 7

OR

(i) What is virtual environment ? How can we create virtual environment ? Also explain the importance of pip in python.

(ii) Explain the following modules in brief giving suitable example :

- os module
- glob module
- sys module
- math module
- random module

(B) Answer any **three** : 3

(1) All Exceptions are subclasses of _____ class.

(2) To establish connection with MySQL database, we use _____ method

(3) Cursor object is useful to execute any SQL command using _____ method.

(4) The _____ module provides regular expression tools for advanced string processing.

(5) The _____ module supplies classes for manipulating dates and times in both simple and complex ways.