

# END TERM EXAMINATION

THIRD SEMESTER [BCA] JANUARY-FEBRUARY 2023

Paper Code: BCAT-211

Subject: Basics of Python Programming

Time: 3 Hours

Maximum Marks: 75

Note: Attempt five questions in all including Q.No.1 which is compulsory.  
Select one question from each unit.

- Q1 Answer **any five** the following: (5x5=25)
- a) Explain the key features of Python?
  - b) Explain Mutable and Immutable Data types with example.
  - c) Consider a list L= [10, 20, 30, 40]. Find the output of following statements.
    - a. L[0] = L[0] + 2
    - b. L = L + 2
    - c. L = L \* 2
    - d. L[1] = 50
    - e. L = L[::-1]
  - d) Explain the following functions with example.
    - i) update()            ii) copy()
  - e) Explain the Dynamic Typing feature of Python with example.
  - f) Write the difference between indexing and slicing with example.

## UNIT-I

- Q2 a) Explain the following terms:- (3½)  
(i) Pass            (ii) Continue
- b) Write a python script to print Fibonacci series for first 20 elements. (4)
- c) Explain Entry - Controlled loops in Python with the help of programs. (5)

## **OR**

- Q3 a) What is the difference between interactive mode and script mode in python? (3)
- b) Write a program that reads a string and check whether it is a Palindrome or not. (5)
- c) Explain the following functions with example. (4½)  
1. lstrip()            2. swapcase()            3. isspace()

## UNIT-II

- Q4 a) What is Tuple? How to define and access the elements of Tuple? Explain it with a code. (6)

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b) What is the output of the following code snippets? (4)

```
1. t1 = (3)
   t2 = (4,5,6)
   t3 = t1 + t2
   print(t3)
2. d = dict()
   d['left'] = >
   d['right'] = <
   print(d['left'] and d['right'] or d['right'] and d['left'])
   print(d['left'] and d['right'] and d['left']) and d['end'])
```

c) How are Dictionaries different from list? (2½)

**OR**

Q5 a) What is Dictionary? What are the different ways to create Dictionary? (5)

b) Explain the following methods of Lists with example: (4)

1. extend()
2. insert()

c) Given a tuple namely City storing cities names ('tokoyo', Delhi, 'Seoul', 'Jaipur', Paris, Luxembourg, Berlin', London', Moscow') as elements. Write a program to print names of the cities as well as their index in the index range 2 to 6, both inclusive. (3½)

### UNIT-III

Q6 a) What is function? Explain the different types of arguments in function in Python. Illustrate with the help of programs. (6½)

b) Predict the output of the following code snippet: (2)

```
def add(a,b,c):
    print(x+y+z)
```

```
c = add(6,16,26)
```

c) Write a program to find factorial of a number using recursion. (4)

**OR**

Q7 a) What is the difference between Package and Module? What are the different ways to import a module in a program? (5)

b) Write a program that reads a number, then converts it into octal and hexadecimal equivalent using built-in functions of Python. (3½)

c) Differentiate between local and global variables in python with the help of a program. (4)

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### UNIT-IV

Q8 a) Explain the following built-in methods of file. (6)

- (i) read(n)
- (ii) seek()
- (iii) write(lines)
- (iv) tell()

b) List the advantages of NumPy Arrays over nested python list. (3½)

c) Explain the following functions with respect to Matplotlib. (3)

1. barh()
2. legend()

**OR**

Q9 a) Explain the different file opening modes with example. (8)

b) Explain the following function with respect to NumPy (4½)

- (i) reshape()
- (ii) ndim()

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