

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)

- Explain the key features of Python?
- Explain Mutable and Immutable Data types with example.
- Consider a list $L = [10, 20, 30, 40]$. Find the output of following statements.
 - $L[0] = L[0] + 2$
 - $L = L + 2$
 - $L = L * 2$
 - $L[1] = 50$
 - $L = L[::-1]$
- Explain the following functions with example.
 - update()
 - copy()
- Explain the Dynamic Typing feature of Python with example.
- Write the difference between indexing and slicing with example.

UNIT-I

Q2

a) Explain the following terms:-

(3½)

- Pass (ii) Continue
- Write a python script to print Fibonacci series for first 20 elements. (4)
- 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)

- 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)

- lstrip()
- swapcase()
- 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'] 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 (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) writelines()
(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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