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**44 (5) BCA-HE-5046**

**2022**

**( Held in 2023 )**

**PROGRAMMING IN PYTHON**

Paper : BCA-HE-5046

Full Marks : 60

Time : Three hours

***The figures in the margin indicate full marks for the questions.***

1. Answer the following : 1×12=12
- (i) Which type of programming does Python support ?
- (a) Object-oriented programming
  - (b) Structured programming
  - (c) Functional programming
  - (d) All of the above
- (ii) Is Python code compiled or Interpreted ?
- (iii) Which keyword is used for function in Python language ?

Contd.

(iv) What will be the output of the following code ?

```
len(["hello", 2, 6, 4])
```

(v) The process of pickling in Python includes conversion of a Python object hierarchy into byte stream.

*(State True or False)*

(vi) What will be the output of the following statement ?

```
>>>print('new' 'line')
```

(vii) How to check whether string S1 contains another string S2 ?

(viii) Which function overloads the + operator ?

(ix) `_del_method` is used to destroy instances of a class.

*(State True or False)*

(x) In Python, if a function doesn't have a `return` statement, what does the function return ?

(xi) Define Flowchart.

(xii) What is the syntax of 'for statement' ?

2. Answer the following questions :  $2 \times 8 = 16$

(i) State the differences between tuples and lists in Python.



- (ii) Define the scope and lifetime of a variable.
- (iii) Mention *three* advantages of NumPy arrays over Python lists.
- (iv) Why is \* called string repetition operator?
- (v) Write a recursive function to demonstrate a countdown to 0 (zero).
- (vi) State the methods that are used in Python Tuple.
- (vii) Explain how Bubble sort works.
- (viii) What is the difference between an Array and a list?

3. Answer the following : **(any three)**

4×3=12

- (i) Write the advantages and disadvantages of Flowchart.
- (ii) Discuss the following list functions :
  - (a) len()
  - (b) sum()
  - (c) any()
  - (d) all()

- (iii) Mention the advantages and disadvantages of bottom up approach.
- (iv) Explain call by value and call by reference in Python.
- (v) How to perform a user input in Python ? Explain with example.

4. Answer the following : **(any four)**

5×4=20

- (i) Write an algorithm to check whether a person is eligible to vote.
- (ii) How to declare constructor method in Python ? Explain.
- (iii) Explain how to implement multiple inheritance in Python with suitable example.
- (iv) Create a flowchart to find the largest among 3 numbers.
- (v) Explain different string formats available in Python.
- (vi) Write a program to repeatedly check for the largest number until the user enters 'done'.