

(2½ Hours)

[Total Marks: 75]

- N.B. 1) All questions are compulsory.  
 2) Figures to the right indicate marks.  
 3) Illustrations, in-depth answers and diagrams will be appreciated.  
 4) Mixing of sub-questions is not allowed.

**Q.1 Attempt All (Each of 5 Marks)**

(15M)

**(a) Multiple choice questions**

(5M)

- \_\_\_\_\_ is not a Keyword in Python.  
 a) False                      b) class                      c) Global                      d) All of the above
- Python is \_\_\_\_\_ language.  
 a) machine                      b) case sensitive                      c) case insensitive                      d) none of these
- What is the correct operator of power ( $x^y$ ) in Python?  
 a)  $x ** y$                       b)  $x ^^ y$                       c)  $x ?? y$                       d)  $x ^ y$
- Python interprets either zero or null values as \_\_\_\_\_.  
 a) Negative                      b) TRUE                      c) Positive                      d) FALSE
- Nothing happens when \_\_\_\_\_ statement is executed.  
 a) break                      b) continue                      c) pass                      d) none

**(b) Fill in the blanks (Variable, lambda, break, List, Built-in, Keyword, def, continue, Dictionary, User-defined, \*, -)**

(5M)

- \_\_\_\_\_ cannot be used as variable name.
- \_\_\_\_\_ statement moves the program control to the top of the loop.
- \_\_\_\_\_ is an unordered collection of key value pair.
- \_\_\_\_\_ Operator cannot be used with Strings in Python.
- Anonymous functions are defined by keyword \_\_\_\_\_.

**(c) Short answers in 1-2 sentences**

(5M)

- Assert statement.
- Definition of function.
- Use of break statement.
- Use of dir () function.
- Membership operators.

**Q.2 Attempt the following (Any THREE)**

(15M)

- Which are the two basic modes in Python Interpreter? Explain.
- List the rules for writing Identifiers in Python.
- Explain any five built-in functions in Python with suitable examples.
- What is Tuple? How to create it? Explain any three tuple operators.
- How to take input and display output of different values in Python? Explain.
- Give Python statement for the following:-
  - Create a String mystring with value "Python World".
  - Print last character of above string.
  - Print length of above string.
  - Print 3<sup>rd</sup> to 5<sup>th</sup> character of above string.
  - Print 3<sup>rd</sup> to 2<sup>nd</sup> last character of above string.

**Q. 3 Attempt the following (Any THREE) (15M)**

- (a) Explain if-elif-else statement with syntax and example.
- (b) Define Dictionary. How to create, update and delete it? Explain with suitable example.
- (c) How to create own functions in Python with/without parameters? Explain with examples.
- (d) How to use iterative for loop in Python? Explain.
- (e) Give the concept of local and global variables in function.
- (f) Write a Python program to give the following output:-  
1 2 3 4 5 6 7 8 9 10  
2 4 6 8 10 12 14 16 18 20  
3 6 9 12 15 18 21 24 27 30

**Q. 4 Attempt the following (Any THREE) (15M)**

- (a) Write a note on Anonymous Functions.
- (b) Define a Class and Object in Python? How to create it? Explain with example.
- (c) List any five methods of Lists? Explain any four with example.
- (d) Explain map () function with an example.
- (e) Write a program in python to count the number of each vowel in a string using dictionary and list comprehension.
- (f) Write a Python program to check whether number is Armstrong or not.

**Q. 5 Attempt the following (Any THREE) (15M)**

- (a) Give the importance of precedence of operators in Python?
- (b) What is the role of Indentation in Python? Give example to illustrate.
- (c) Explain Random module and its functions.
- (d) Write a program in python to display the Fibonacci sequence up to  $n^{\text{th}}$  term, where n is given by the user.
- (e) Write a program in Python to solve quadratic equation when values of a, b and c are not equal to zero.

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