

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(MID SEMESTER EXAMINATION MO/SP20\*\*)

CLASS: BTECH/BARCH  
BRANCH: BT/ECE/EEE/MECH/PIE/CIVIL/CHEMICAL/BARCH

SEMESTER: IV  
SESSION: SP/2023

SUBJECT: IT271 INTRODUCTION TO PYTHON

TIME: 2 Hours

FULL MARKS: 25

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates

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|--------|--|-----|-----|
| Q.1(a) | Define the Algorithm and its properties. What are the building blocks of the algorithm?  | [2] | 1 1 |
| Q.1(b) | Write an algorithm for Bubble sort and trace it with suitable examples by considering an array of size 10.   | [3] | 1 1 |
| Q.2(a) | (i) List the standard data types in python.<br>(ii) What is the multiline statement in python?   | [2] | 1 3 |
| Q.2(b) | (i) Explain string slicing with examples.<br>(ii) Write a program to check whether an entered string is a palindrome or not.   | [3] | 1 1 |
| Q.3(a) | (i) What is the difference between tuples and lists in Python?<br>(ii) What are the advantages of Tuple over List in python?   | [2] | 2 2 |
| Q.3(b) | (i) What are Python's dictionaries? Explain how to create a dictionary in python.<br>(ii) What are an indexing and negative indexing in Tuple? Explain with examples.  | [3] | 2 4 |
| Q.4(a) | Write at least six methods that are used in Python Lists   | [2] | 2 2 |
| Q.4(b) | (i) What is the output of print tuple[1:3] if tuple = ( 'abcd', 786 , 2.23, 'john', 70.2 )?<br>(ii) What is the output of the following:<br>a=(1,2,3,4,5)<br>b=(1,2,3,4,6)<br>if a < b :<br>print(a)<br>else:<br>print(b)                                | [3] | 2 3 |
| Q.5(a) | How does del and pop operation work on dictionaries? Give an example.  | [2] | 2   |
| Q.5(b) | (i) What is the output of the following:<br>T= ( 'abcd', 786 , 2.23, 'john', 70.2 )<br>N= (123, 'john')<br>print(T+N)<br>(ii) Write a program to count the number of lines, words, and characters in a given paragraph that will be taken from the user. | [3] | 3   |

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