

Computer Science [SEC]

[NEP-CBCS]

B.Sc. First Semester End Examination-2023

Practical

PAPER-COS SEC-01P

[Python Lab]

Full Marks: 20

Time: 02 Hrs

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

Answer any one question:

1x7= 7

1. Write a function in Python to return the n^{th} Fibonacci numbers.
 2. Write a function in Python to generate and print prime numbers between 2 to n.
 3. Create a Python class named Stack that implements a stack data structure. Include methods for push, pop and checking if the stack is empty. Use those methods of Stack class to reverse a string.
 4. Design a Python program that checks whether a given string has balanced parentheses using a stack.
-

(2)

5. Create a Python Class named Queue that implements a queue data structure. Include methods for enqueue, dequeue, and checking if the queue is empty.
6. Given the following dictionary
Student_data = {
 'name': Alice',
 'age': 20,
 'grade': 'A',
 'is_registered; True
}
Write a python code to :
 - Add a new key-value pair 'course' with the value 'Python' to the student data dictionary.
 - Update the 'grade' to 'B'
 - Check if the key 'marks' is in the dictionary and print 'Marks: X' if it's there, where X is the value; otherwise, print 'Marks not found'
7. Write a python code to multiply two matrices without using system defined functions.
8. Write a python program to find GCD of two numbers
9. Write a program to convert decimal to binary using recursion.
10. Write a program to find sum of all odd numbers between 1 to n.
11. Write a program to print the following

(3)

```
* * * * *  
* * * *  
* * *  
* *  
*
```

12. Write a python program to transpose a matrix.
13. Write a python program to count the number of digits of a number.
14. Write a program to calculate the area of a circle.
15. Write a program to check whether a number is palindrome or not.
16. Write a program for factorial of a number by using function.

Viva – 03

PNB - 02