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**University Roll No.....**

**Mid-Term MakeUp Examination, Odd Semester 2021-22**

**B. Tech (CSE/ECE/EE), 1<sup>st</sup> Year, 2<sup>nd</sup> Semester**

**Sample Paper 03: BCSG1001 Python Programming**

**Time: 2 Hours**

**Maximum Marks: 30**

**Section- A**

**Note: Attempt All Five Questions.**

3 x 5 = 15 Marks

Q1. What are the key features of Python Language? Explain the applications of Python.

Q2. Discuss the function min(), max(), id() and type() in python with suitable examples. Write a Python Program to check whether given number is Armstrong or not.

Q3. What is Short-Circuit Evaluation in Python Programming? Explain with suitable example.

Q4. Write a Python program to swap all the characters in a given string from lower case to upper case and upper case to lower case. (Don't use any string built-in methods)  
(Hint: pyTHon<->PYthON)

Q5. Write a Python program to print following pattern using \* where the number of rows entered by the user. Examples

rows=4

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

Rows=6

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

## **Section – B**

**Note: Attempt All Three Questions.**

3 x 5 = 15 Marks

Q1. Given a string with some repeated characters, your task is to write a Python script to rearrange the string so that no two adjacent characters are the same.

If the given string is successfully rearranged in the correct order (according to the given task), display "True" and if this is not possible, display "False".

For example, given string "aaabbc", can be arranged "ababac" so output will be "True". For the string "aaab" output should be "False".

Q2. What is a tuple in Python Programming language? Explain, what if we try to change Python tuple elements and what type of errors are generated?

What is the output produced by the following lines of program code?

```
>>> up = (1, 2, 3, 4, 5, 6)
>>> top = ('C', 'C++', 'Python', 'Java')
>>> topup = sum ((up, top), ())
>>> print(topup)
```

Q3. Write any five string methods in Python that return integer only and explain each method with example. Write a python program to check if all characters in string are same or not. Print 'all characters are same' if all characters are same otherwise print None.

sample input:

'ssSSS'

sample output:

'all characters are same'

Q4. Explain logical operators in Python3 with suitable examples. What do you mean by short-circuit code explain with an example?

Write the output of the code below?

```
out = print('Hello') or print('Python')
print(out, type(out))
```