P P SAVANI UNIVERSITY

Third Semester of B. Tech. Examination
December 2021
SECE2080 Application based Programming in Python

07.12.2021, Tuesday   Time: 09:00 a.m. To 11:30a.m.   Maximum Marks: 60

Instructions:
1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION – I

Q - 1	Answer the Following: (Any five)	[05]
(i)	What is the difference between copy.copy( ) and copy.deepcopy( ) functions?	
(ii)	Which method is used to generate float random number between 0.0 to 1.0?	
(iii)	Lists are ordered sequences of elements. (True/False)	
(iv)	Write for loop that prints numbers from 0 to 57, using range function.	
(v)	Write Python statement to create empty dictionary.	
(vi)	Compute 4^4 using math module.	
(vii)	What is the full form of Numpy? How to create empty 2d array using numpy?	
Q - 2 (a)	Write a python program to find the sum of all Odd and Even numbers up to a number specified by the user.	[05]
	Example:	
	Enter number: 10	
	Sum of all odd numbers(i.e. 1,3,5,7,9): 25	
	Sum of all even numbers(i.e. 2,4,6,8,10): 30	
Q - 2 (b)	Explain the following list methods with an example.	[05]
	a) append() b) extend() c) insert() d) index() e) sort()	

OR

Q - 2 (a)	Write a python program that accepts a sentence and calculate the number of digits, uppercase and lowercase letters.	[05]
Q - 2 (b)	Explain the following Set methods with an example.	[05]
	a) intersection() b) union() c) issubset() d) difference() e) update()	
Q - 3 (a)	Explain the following Pandas methods with an example.	[05]
	a) head() b) tail() c) fillna() d)dropna() e) duplicated()	
Q - 3 (b)	Explain Local and Global Scope in Python programs. What are local and global variables? How can you force a variable in a function to refer to the global variable?	[05]

OR

Q - 3 (a)	Define a Python function with suitable parameters to generate first N Fibonacci numbers. The first two Fibonacci numbers are 0 and 1 and the Fibonacci sequence is defined as a function F as $F_n = F_{n-1} + F_{n-2}$. Write a Python program which accepts a value for N (where N >0) as input and pass this value to the function.	[05]
Q - 3 (b)	What are the key features of Python?	[05]
Q - 4	Attempt any one.	[05]
(i)	What is user defined function? Explain different ways of passing the parameters in user defined functions? Explain with suitable example.	
(ii)	Why numpy array is better than regular python array? Explain with suitable example.	

Q - 1   Answer the Following:

(i)   How many objects and reference variables are there for the given Python code?   [05]

```
class A:
        print("Inside class")
A( )
A( )
obj=A( )
```

    a) 2 and 1
    b) 3 and 3
    c) 3 and 1
    d) 3 and 2

(ii)   What is the difference between flask and django?

(iii)   Which of the following options can be used to read the first line of a text file data.txt?
    a) f = open('data.txt'); f.read()
    b) f = open('data.txt','r'); f.read(n)
    c) myfile = open('data.txt'); f.readline()
    d) f = open('data.txt'); f.readlines()

(iv)   What is a python library that can be used to send and receive data over HTTP?
    a) http
    b) urllib
    c) port
    d) header

(v)   What is output of following program?
```
import re
p = re.compile('\d+')
print(p.findall("I met him once at 11 A.M. on 4th July 1886"), end = " ")
p = re.compile('\d')
print(p.findall("I went to him at 11 A.M."))
```

    a) ['11', '4', '1886', '11']
    b) ['1141886'] ['1', '1']
    c) ['11', '4', '1886'] ['11']
    d) ['11', '4', '1886'] ['1', '1']

Q - 2 (a)   What is overloading and overlapping? Explain with an example.
Q - 2 (b)   What is findall() method? Explain use of it using an example.   [05]
                                                      [05]

OR

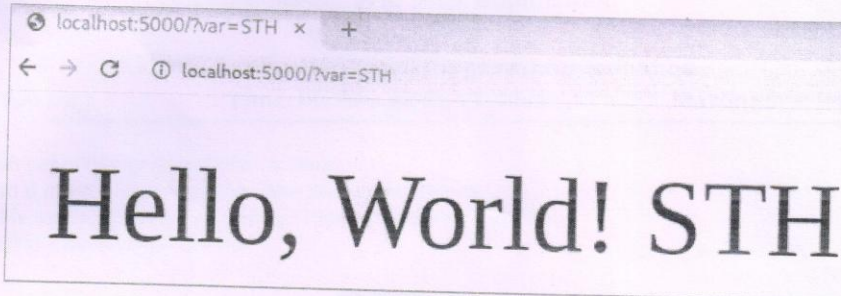**Q - 2 (a)**   Which are the OOP concepts of class? Explain any one of them using a Python Example.
Q - 2 (b)   Write a short note on Python MVC Architecture.   [05]
Q - 3 (a)   Write a python program to remove repeated lines from a file.   [05]
Q - 3 (b)   Write a short note on Flask Framework.   [05]
                                                      [05]

OR

Q - 3 (a)   Write a python program which gives output as shown in below image.   [05]

Hello, World! STH

Q - 3 (b) Write a Python program that matches a string that has an a followed by zero or more b's. [05]

Q - 4 Attempt any one. [05]

(i) Write a code to create any web application.

(ii) Write a Python program to convert a date of yyyy-mm-dd format to dd-mm-yyyy format.

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