PES University, Bengaluru-85
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UE18CS306B

OCTOBER 2020: IN SEMESTER ASSESSMENT, B.TECH, V-SEMESTER

TEST – 1

UE18CS306B – Python Application Programming

Time: 01 Hr | Answer All Questions | Max Marks: 30

1	a)	Consider the following scenario and answer the questions. A microwave oven which consists of components like transformer, capacitor, magnetron, waveguide and some more. To perform an operation these different components needs to be activated in a sequence. Every component has different outputs and inputs. Imagine you will have separate external controller for all these components using which you will heat the food. 1. Identify the design pattern. 2. Elaborate on the usage of the design pattern with respect to the scenario given.	03 (1+ 2)
			02

	b)	What gets printed?
		
		``python
		class Parent(object):
		    x = 1
		
		class Child1(Parent):
		    pass
		
		class Child2(Parent):
		    pass
		
		print(Parent.x, Child1.x, Child2.x)
		Child1.x = 2
		print (Parent.x, Child1.x, Child2.x)
		Parent.x = 3
		print (Parent.x, Child1.x, Child2.x)
		``
			05

	c)	Create a class called MyStack which supports push, pop and display operations. 1) Implement the stack class using a list. Specify the upper bound of the size while creating the stack object. 2) Provide exception handling mechanism for stack overflow and stack underflow.	

2	a)	1) Given an input file which contains list of names, phone numbers and email-ids separated by spaces in the following format:-
		    Alex 80-23425525 alex234@yahoo.com
		    Emily 322-56775342 em_44@gmail.com
		    Grace 20-24564555 softech_grace@rediffmail.com
		
		Write a program using regular expression to find the total number of people having Gmail id.
			06
			(4+ 2)

2) Write python code using regular expression to replace each word by word:length for the given string of words.

Ex : this is a test => this:4 is:2 a:1 test:4 .

b)	Enumerate the differences between search() & match() functions .	02

c) Match the following:

         1.   ()   (a) grouping back reference

         2.   []   (b) Creates a group   02

         3. $ (c) Anchors a match at the end of a string

         4.   \   (d) character class

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3 a) What gets printed when the following code is executed?

```
from threading import *
print(current_thread().getName())
def func1():
    print("Child Thread")
child=Thread(target=func1)
child.start()
print("Executing thread name :",current_thread().getName())
```

03

b) b) Explain the following with respect to threads?
- start
- conditional wait

02

c) Write a program to create 2 threads such that one thread prints the even number between 1 to 20 followed by other thread printing the odd number between 30 to 50.

Sample o/p:

2 4 6 8 18

31 33 49

05