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RV COLLEGE OF ENGINEERING®
(An Autonomous Institution affiliated to VTU)
I / II Semester B. E. Regular / Supplementary Examinations Feb-2024
Common to all programs

INTRODUCTION TO PYTHON PROGRAMMING (ELECTIVE)

Time: 03 Hours

Instructions to candidates:

Maximum Marks: 100

1. Answer all questions from Part A. Part A questions should be answered in first three pages of the answer book only.
2. Answer SIX full questions from Part B. In Part B question numbers 2 and 11 are compulsory. Answer any one full question from 3 and 4, 5 and 6, 7 and 8 & 9 and 10. Question number 11 is lab component (compulsory).

PART-A

1	1.1	What will be the output of the following code? $print\ (print(print("Python\ SEE")))$	
	1.2	Give one difference between local and global variables in python.	01
	1.3	What will be the output for the following code? $abc = 10$ $x = abc += 2$ $print\ (x)$	01
	1.4	What will be the output for the statement? $print\ (type(oxFF))$	01
	1.5	What is the purpose of the break statement in a loop?	01
	1.6	What will be printed as the value of x for the below given code? $x = 0$ $while(x < 100)$ $x += 1$ $print(x)$	01
	1.7	Write a program function that takes a list of numbers as input and returns the sum of all even numbers in the list.	01
	1.8	What will be the output for the code given below: $int1 = 10$ $int2 = 6$ $if\ int1! = int2$ $int2 = ++ int2$ $print(int1 - int2)$	01
	1.9	What will be the output of this code? $mytuple1 = (5, 1, 7, 6, 2)$ $mytuple1.pop(2)$ $print(mytuple1)$	01
	1.10	Find the number of objects created when the following code is executed $Class\ A:$ $print("Inside\ class")$ $A()$ $A()$ $obj = A()$	01

PART-B

2	a	Apart from being simple, easy to understand and code, there are several reasons/features that makes python a popular language in today's world. What are they?	07
	b	What are the different categories of operators available in Python? Explain with the help of examples and proper syntax for the same.	07
3	a	Write a python program that prints all prime numbers between 1 and 20 using nested loops.	06
	b	Write a python program that uses a for loop to print the following pattern:	05
	c	What are "infinite loop" in python. Provide an example of how to create one and how to terminate it.	03

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

OR

4	a	Using relevant code and its output, demonstrate how to skip an iteration in a for loop in python.	05
	b	Write a python program that calculates the sum of digits in a given number using a loop.	05
	c	Write a python program to print the given pattern using loops	04

```
1 1 1 1 1
2 2 2 2
3 3 3
4 4
5
```

5	a	Write a python program that counts the number of vowels in the given string and also prints the reverse of it (without using built-in functions).	07
	b	What are lists and negative indexing? Write a python program that takes a list of numbers as input and calculates the sum of all even numbers in the list.	07

OR

6	a	Write a python program that takes a sentence and counts the number of words in it and also replaces all occurrences of a specific word in a sentence with another word.	07
	b	Consider a python list, explain the following methods functionality in python *append* ( ), *extend* ( ), *insert* ( ), *remove* ( ), *pop* ( ), *index* ( ), *count* ( )	07
7	a	With the help of relevant code, explain the different ways in which exception handling is done in python.	07
	b	Create a python function called *count_characters* that takes a string as input and returns a dictionary with character frequencies.	07

OR

8	a	What are the different modes to open a file in python? Explain the methods functionality *flush*( ), *read*(*n*) and *tell* ( ) in python.	07
	b	Explain the differences between a function parameter and a function argument in python. Illustrate with an example.	07
9	a	Create a python class called *BankAccount* with attributes *account_number*, *holder_name*, and *balance*. Implement methods to deposit and withdraw money, and encapsulate the balance attribute to prevent direct modification.	07
	b	Use the concept of parameterized constructers to pass a different name, age, and salary for each employee object in the class employee.	07

OR

10	a	Create a Python class called *Rectangle* with attributes *length* and *width*. Implement a class method *create_square* that creates a square *Rectangle* object with equal length and width.	07
	b	Create a Python class called *Shape* with a method *calculate_area*( ). Create two subclasses, *Circle* and *Rectangle*, and implement the *calculate_area*( ) method in each subclass.	07
LAB COMPONENT			
11	a	Write a python program to read a paragraph from the user and count he number of words, and frequency of words appearing, and search for the specific word.	10
	b	Create a text file called *my_file.txt* with some content. Write a python program to capitalize the first letter of every word, and print the content of the file in reverse order.	10