

U.S.N.

# B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

## September / October 2023 Semester End Main Examinations

Programme: B.E.

Semester: I / II

Branch: Common to all Branches

Duration: 3 hrs.

Course Code: 22CS1ESPYP / 22CS2ESPYP

Max Marks: 100

Course: Introduction to Python Programming

**Instructions:** 1. Answer any FIVE full questions, choosing one full question from each unit.  
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.			UNIT - I	CO	PO	Marks
	1	a)	Write the difference between variables and keyword in python and explain with an example program	CO1	PO 2	4
		b)	With the help of conditional statements, write the python program to calculate bill amount based on the mode of the payment i) credit card -10% discount on the bill ii) debit card - 20% discount on the bill iii) upipay- 30% discount on the bill iv) cash on delivery- No discount on the bill	CO3	PO3	4
		c)	Analyze the python code, show the iterations and write the output <code>n = 5</code> <code>k = 5</code> <code>for i in range(0,n+1):</code> <code>    for j in range(k-i,0,-1):</code> <code>        print(j,end=' ')</code> <code>print()</code>	CO2	PO3	6
		d)	Write a python program to print all the even numbers between 100 to 200 which are multiples of 5 and multiples of 7 separately.	CO3	PO3	6
			UNIT - II			
	2	a)	Define string in python. Demonstrate the accessing of the individual character of a string with and without using loops with an example.	CO1	PO2	6
		b)	Write a Python program to add 'ing' at the end of a given string (length should be at least 3). If the given string already ends with 'ing', add 'ly' instead. If the string length of the given string is less than 3, leave it unchanged.	CO3	PO3	6

		c)	Define List and write the syntax to declare an empty list and nested list in python and demonstrate with an example that the lists are mutable	CO1	PO2	<b>4</b>
		d)	Write a Python program to count the number of strings from a given list of strings. The string length is 2 or more, and the first and last characters are the same.	CO3	PO3	<b>4</b>
			<b>UNIT - III</b>			
	3	a)	Define function. Write the syntax for function definition and function call. Demonstrate the same with an example.	CO1	PO2	<b>6</b>
		b)	Write a Python program to search an element in a tuple consisting of n numbers and also print the element along with its position in tuples.	CO3	PO3	<b>6</b>
		c)	Write the function 'count' that will return a dictionary containing key as "letter or special character" i.e., key should not be space and value is the occurrences of the character in the given string.	CO3	PO3	<b>8</b>
			<b>OR</b>			
	4	a)	Define tuple. How do you create a single element in a tuple? Write a python program to find the common elements between two tuples.	CO1	PO2	<b>6</b>
		b)	One of the Indian Administrative offices wanted to calculate the total number of senior citizens, average number of senior citizens in SouthIndia. SouthIndia has the following states and its relevant senior citizens count -- TamilNadu-2000, Kerala-10000, Karnataka-230000, Andrapradesh-120000, Telangana-10000. Write a python program to create a dictionary with the name SouthIndia, key with state names and value of key is number of the senior citizens in state. Calculate the total senior citizens by using for loop in dictionary and also calculate average of population.	CO3	PO3	<b>6</b>
		c)	Using functions, write a python program to find whether the two integer values are amicable or not. Note: Two different numbers are called amicable numbers if the sum of the proper divisors of each is equal to the other number. For example 220 and 284 are amicable numbers.  Sum of proper divisors (220)= 284 Sum of proper divisors (284 )= 220	CO3	PO3	<b>8</b>
			<b>UNIT-IV</b>			
	5	a)	Define class, data member, class variable, instance variable, method, object. Demonstrate the same with an example program.	CO1	PO2	<b>10</b>
		b)	Write a Python class, Restaurant with attributes like menu_items, book_table, and customer_orders, and methods like add_item_to_menu, book_tables, and customer_order. Perform the following tasks:	CO3	PO3	<b>10</b>

			<ul style="list-style-type: none"> <li>• Now add items to the menu.</li> <li>• Make table reservations.</li> <li>• Take customer orders.</li> <li>• Print the menu.</li> <li>• Print table reservations.</li> <li>• Print customer orders.</li> </ul>			
			<b>OR</b>			
	6	a)	Demonstrate the operator overloading in python with a suitable example program.	CO1	PO2	<b>10</b>
		b)	Write a Python class BankAccount with attributes like account_number, balance, date_of_opening and customer_name, and methods like deposit, withdraw, and check_balance.	CO3	PO3	<b>10</b>
			<b>UNIT - V</b>			
	7	a)	Write a Python program using regular expression that matches a string that has an 'a' followed by anything ending with 'b'	CO3	PO3	<b>6</b>
		b)	Demonstrate the difference between write mode and append mode in files with relevant program and output the same.	CO1	PO2	<b>6</b>
		c)	Write a Python program to copy the contents of a file to an another file.	CO3	PO3	<b>8</b>

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