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

Autonomous Institute Affiliated to VTU

February / March 2025 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.
3. Write output for all the codes.

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)	Simulate a simple calculator using a python program by taking user input. Show the +, -, *, /, //, % operations. Also write the program output.	*CO1*	*PO1*	**6**
	b)	Write a python program to generate Fibonacci series starting from 1, 1. Take user input on how many numbers to print in the series.	*CO 2*	*PO 2*	**7**
	c)	Write a Python program to input student name, marks1, marks2 marks3 and roll no. Assuming maximum marks per subject is 50, calculate the percentage. Display "Excellent" if percentage is >90, "Very Good" if percentage is in between 80 to 90, "Good" if percentage is in between 70 to 80. Print "Improve" if none of the above specified condition is met.	*CO 2*	*PO 2*	**7**
		OR			
2	a)	Write a python program to calculate by taking appropriate input. Also write the program output. i. Area of circle. ii. Area of square iii. Area of rectangle	*CO 1*	*PO1*	**6**
	b)	Write a python program to print the following pattern. 1 1 2 1 2 3 1 2 3 4 1 2 3 4 5	*CO 2*	*PO 2*	**7**

		c)	Write a Python program to accept temperature from the user. Display appropriate statement based on the below conditions. Temp>40 – Very hot Temp between 30 to 40 – Hot Temp between 25 – 30 – Moderate Temp between 20 to 25 – Cold Temp between 15 to 20 – Very cold Below 15 – Freezing cold	*CO2*	*PO2*	**7**
			UNIT - II			
	3	a)	You are given a list of strings. Write a program to count the number of strings in the list that have the same start and end character.	*CO2*	*PO2*	**6**
		b)	Write a program to accept a string and display the same with every alternate letter as capital. Eg: hello to be printed as HeLlO	*CO 3*	*PO 3*	**7**
		c)	Write a Python program to create a list containing odd numbers from a given list.	*CO2*	*PO2*	**7**
			OR			
	4	a)	Take a sample string from the user (min length – 20) and perform the following operations: a. Extract 3rd and 6th character. b. Extract character from index 5 to 10(Inclusive) c. Extract the last character. d. Extract character from 3rd index till the end e. Extract the last 3 characters. f. Reverse a string using slicing operator.	*CO2*	*PO2*	**6**
		b)	Write a program to identify the domain name from a given email id. Eg: Given a.bc@gmail.com the domain name is "gmail"	*CO3*	*PO3*	**7**
		c)	Write a Python program to get the largest number from a list of numbers entered by the user. (Do not use inbuilt function)	*CO2*	*PO2*	**7**
			UNIT - III			
	5	a)	Write a program to count the frequency of occurrence of each character in a given string using dictionaries.	*CO2*	*PO2*	**6**
		b)	Write a program to identify duplicate values in a tuple.	*CO2*	*PO2*	**7**
		c)	Write a python function to remove duplicate words in a string.	*CO2*	*PO2*	**7**
			OR			
	6	a)	Write a program to create a dictionary that contains the name, mark pair. Fetch name, mark pairs of only those students who have marks greater than 30.	*CO2*	*PO2*	**6**

		b)	Write a program to delete an element from a tuple of numbers. The element to be deleted should be taken from the user.	*CO2*	*PO2*	**7**
		c)	Write a Python function to calculate the factorial of a number (a non-negative integer). The function has to accept the number as an argument.	*CO2*	*PO2*	**7**
			UNIT - IV			
	7	a)	Develop a Python program which creates the class Circle that has member radius. Include methods to do the following. a. Accept the radius from the user b. Find the area of the circle c. Find the perimeter of the circle d. Display all the details	*CO3*	*PO3*	**10**
		b)	Define Inheritance with an example program. Elaborate on the use of "super" keyword.	*CO1*	*PO1*	**10**
			OR			
	8	a)	Develop a python program which creates the class Employee that has members name and id. Include a method "hike" that accepts salary as the parameter. This method should compute total salary based on the below conditions. If salary is less than 10000 30% hike is given. If salary lies between 10000 to 20000, 20% hike will be given.	*CO3*	*PO3*	**10**
		b)	Explain operator overloading and demonstrate the overloading of + and * operators using appropriate code.	*CO1*	*PO1*	**10**
			UNIT - V			
	9	a)	Define regular expression. Describe any 6 wild card characters.	*CO1*	*PO1*	**10**
		b)	Write a program to print the number of lines, words and characters in a given file.	*CO2*	*PO2*	**10**
			OR			
	10	a)	Write a program to read a string from the file and display the frequency of occurrence of each character in the string.	*CO1*	*PO1*	**10**
		b)	Elaborate on the functions findall(), search(), split(), and sub() in the context of regular expressions using an example program.	*CO2*	*PO2*	**10**

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