Enrollment No.: _____

Darshan UNIVERSITY
योगः कर्मसु कौशलम्

Darshan Institute of Engineering & Technology
B.Tech. | Sem-4 | Summer-2023

Course Code	:	2101CS405	**Date**	:	07-04-2023
Course Name	:	Python Programming	**Duration**	:	150 Minutes
			Total Marks	:	70

Instructions:
1. Attempt all the questions.
2. Figures to the right indicates maximum marks.
3. Make suitable assumptions wherever necessary.

Q.1	**(A)**	State the Differences Between List, Tuple, Set and Dictionary.	**4**
	(B)	Explain the role of indentation in python.	**3**
		OR	
		Explain List Comprehension with an example.	
	(C)	Explain features of python programming language.	**7**
		OR	
		Explain String slicing and String methods with example.	
Q.2	**(A)**	Write a python program to check whether the given number is palindrome or not.	**4**
	(B)	Explain Membership operator with an example.	**3**
		OR	
		Explain tuple unpacking with an example.	
	(C)	Explain function arguments types with example.	**7**
		OR	
		What is a lambda function? How it is differs from normal function? Explain it with an example.	
Q.3	**(A)**	Write a python program to count lines, words, and characters within a text file.	**4**
	(B)	Explain tell() and seek() with an example.	**3**
		OR	
		Explain readlines() and writelines() with an example.	
	(C)	Explain user defined exception with example.	**7**
		OR	
		Explain try, catch, else and finally with an example.	

Q.4 **(A)** Write a python program to create a Number module which defines findFactors function which return the factors of a given number. Create another file that uses the Number module. **4**

(B) Explain choice(), randrange() and seed() functions of random module. **3**

OR

Explain datetime and timedelta class with example.

(C) Write a python program to display a line chart of two lines and change the line appearance like color, width, marker and line style. Also display the label, annotation and legend on the graph. Consider random data for lines. **7**

OR

Write a python program to display a pie chart for the popularity of car companies with labels, percentage, colors and explode values.
Consider sample data:

	Hyundai	Maruti	Mahindra	Tata	Honda
Values	25.4	30.2	16.8	16	13.2
Explode	0.1	0.5	0	0	0
Color	Blue	Green	Red	Cyan	Maroon

Q.5 **(A)** Define Time class with hour and minute as a data member. Also define the addition method to add two time objects. **4**

(B) Explain __init__() method with an example. **3**

OR

Explain instance, class and static methods with example.

(C) What is inheritance? Explain types of inheritance with example. **7**

OR

Explain the use of super() method with example.

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Table showing the Bloom's Taxonomy Level and Course Outcome

Question		Bloom's Taxonomy Level *	Course Outcome**
Q.1	(A)	R	CO1
	(B)	U	CO1
	(C)	U	CO1
Q.2	(A)	A	CO2
	(B)	U	CO2
	(C)	U	CO2
Q.3	(A)	A	CO3
	(B)	U	CO3
	(C)	U	CO3
Q.4	(A)	A	CO4
	(B)	U	CO4
	(C)	A	CO4
Q.5	(A)	A	CO5
	(B)	U	CO5
	(C)	U	CO5

* **Bloom's Taxonomy Level**

R - Remembrance, **U** - Understanding, **A** - Application, **N** - Analyze, **E** - Evaluate, **C** – Create

** **Course Outcome**

At the end of the course, student will be able to:

CO1 : explain basic features, data types and data structures in python.

CO2 : demonstrate operators, conditional statement, looping statement and functions.

CO3 : implement file handling and Exception handling programs.

CO4 : experiment with modules and matplotlib.

CO5 : use object-oriented programming approach with python.