

	ARKA JAIN University Jharkhand		[04-07-2025] END SEM EXAMINATION School of Engineering & IT
Program	DS & AI (IBM)	Branch	B. Tech
Subject Name	Programming with Python	Session	Even, 2024-2025
Semester	II	Year	June, 2025
Time: 3 Hour Max. Marks : 70			
• Start writing from 2nd page onwards; <u>don't</u> Write on the 1st Page Backside			
• Answer all Questions of Section A (Compulsory) • Answer Any Four out of Six of Section B • Answer Any Three out of Five of Section C • Possession of <u>Mobile Phone</u> or any kind of Written Material, <u>Arguments with the Invigilator</u> or <u>Discussion with Co-Student</u> will come under <u>Unfair Means</u> and will <u>Result</u> in the <u>Cancellation of the</u>			
Paper(s).			
Knowledge Level (KL)	K1 : Remembering K2 : Understanding	K3 : Applying K4 : Analysing	K5 : Evaluating K6 : Creating

Q.N	QUESTIONS	Marks	COs	KL
1				
i	Define Python. Mention two features of Python language.	2	CO1	K1
ii	Differentiate between a list and a tuple in Python.	2	CO4	K2
iii	What is the use of the eval() function in Python?	2	CO2	K1
iv	List any four core data types in Python.	2	CO1	K1
v	Explain the purpose of the range() function.	2	CO2	K2
vi	Name the different modes available for file handling in Python.	2	CO5	K1
vii	What is a recursive function? Give an example.	2	CO3	K2
viii	Describe the role of break and continue statements in loops.	2	CO3	K2
ix	Define machine learning.	2	CO7	K1
x	Define object oriented programming. List four features of object oriented programming.	2	CO4	K1

Section A (Each question Carry 02 Marks from Q1-i to x - 20 Marks)

Section B (Answer any FOUR out of SIX) – 20 Marks (Each question Carry 05 Marks)			
Q. No.	QUESTIONS	Marks	COs
2	Write a Python program to check if a given number is Armstrong or not.	05	CO1
3	Implement a Python function to calculate the factorial of a number using recursion.	05	CO3
4	Write a Python program to find the whether a given number is Strong or not.	05	CO1
5	Write a Python program that reads a file and counts the frequency of each word.	05	CO5
6	Write a Python program to calculate the area of a circle using class Circle.	05	CO4
7	Compare the structure and features of lists, sets, and dictionaries with suitable examples.	05	CO4
Section C (Answer any THREE out of FIVE) – 30 Marks (Each question Carry 10 Marks)			
Q. No.	QUESTIONS	Marks	COs
8	Explain with suitable examples different types of inheritance supported by Python.	10	CO4
9	Describe various Python libraries used for machine learning such as NumPy, Pandas, Scikit-learn, Scipy, and Matplotlib.	10	CO6
10	What are the differences between classification and regression? Explain with suitable examples.	10	CO7
11	What is data visualization? Explain various types of graphs used for visualization.	10	CO6
12	Create a class student that stores roll number, name and marks in three subjects of the students. Write a program to display the information roll no, name, total marks, and average marks stored about the student.	10	CO4

CO- Course Outcomes,		KL- Knowledge Level,	PO – Program Outcome
Course Outcomes	CO1	Understand the vision of Python from a global context.	
	CO2	Understand why Python is a useful scripting language for developers.	
	CO3	Understand the content of how to write loops, decision statements, write functions and pass arguments in Python.	
	CO4	To learn how to use lists, tuples, and dictionaries in Python programs and to learn how to identify Python object types.	
	CO5	To learn how to read and write files in Python. Will learn how to create Pandas DataFrames, calculate aggregates, and merge multiple tables.	
	CO6	Will understand how to import in-built libraries and use matplotlib for graph representation and how regular pattern matching will be done.	
	CO7	Will understand the concepts of algorithms of Machine learning and learn how to train the models.	
GRAPHICAL REPRESENTATION			
Bloom's level wise Marks Distribution		Course Outcome wise Marks Distribution	
■ K1 ■ K2 ■ K3 ■ K4 ■ K5 ■ K6		CO-1 CO-2 CO-3 CO-4 CO-5 CO-6 CO-7	