JGI ARKA JAIN University Jharkhand — NAAC GRADE A ACCREDITED UNIVERSITY			[26-11-2025] END SEM EXAMINATION School of Engineering & IT
Program	Master of Computer Application		
Subject Name	Machine Learning And Applications	Session	Odd, 2025-26
Semester	III	Year	Nov, 2025
Time: 3 Hour Max. Marks : 70	• Start writing from 2nd page onwards; **don't 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 Mobile Phone** or any kind of **Written Material, Arguments with the Invigilator or Discussion with Co-Student** will comes under **Unfair Means** and will **Result** in the **Cancellation of the Paper(s)**.		
Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

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

Q. N 1	QUESTIONS	Marks	COs	KL
i	Name any two popular Python libraries used in Machine Learning.	02	CO1	K1
ii	List few applications of Machine Learning.	02	CO1	K1
iii	What is a Decision Tree?	02	CO2	K2
iv	Mention two real-world applications of Machine Learning.	02	CO1	K2
v	What is Random Forest?	02	CO2	K2
vi	How do you handle missing data?	02	CO4	K3
vii	What is a Neural Network?	02	CO2	K2
viii	What is a Deep Q-Network (DQN)?	02	CO5	K2
ix	What is F1-score?	02	CO2	K3
x	How do you prevent overfitting?	02	CO4	K4

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question Carry 05 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Describe Regression and Correlation with example.	05	CO1	K2
3	Write limitations of Regression Model.	05	CO2	K4
4	Differentiate between bagging, boosting and voting.	05	CO2	K4
5	Write down the major differences between K-mean clustering and hierarchical clustering.	05	CO2	K4
6	Explain how Support Vector Machine can be used for classification linearly separable data.	05	CO4	K3
7	Use K Mean clustering to cluster the following data into groups. Assume cluster centroid are m1=2 and n2=4. The distance function used is Euclidean distance. {2,4,10,12,20,30,11,25}.	05	CO4	K3

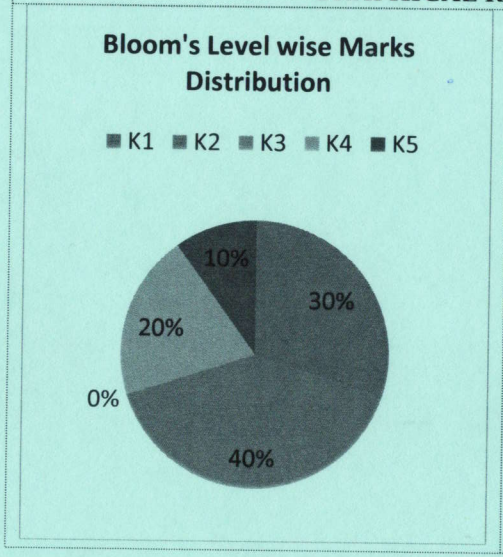
Section C (Answer any THREE out of FIVE) – 30 Marks
(Each question Carry 10 Marks)

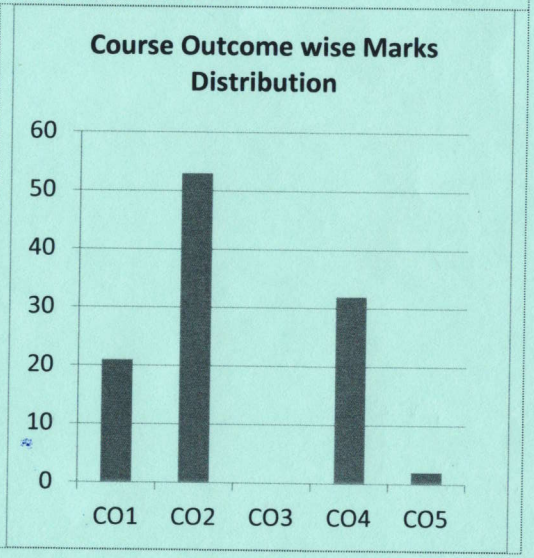
Q. No.	QUESTIONS	Marks	COs	KL
8	Discuss the supervised and unsupervised learning with example.	10	CO1	K2
9	What is KNN? Where do use the concept? List the importance with example.	10	CO2	K3
10	Explain the decision tree concept with example.	10	CO2	K2
11	Explain about K-means algorithm with an example.	10	CO4	K3
12	Explain Hierarchical clustering with an example.	10	CO2	K2

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	Understand the fundamentals of wireless communication and mobile networking.
	CO2	Analyze and evaluate different wireless communication technologies.
	CO3	Explain the architecture and protocols of mobile networks.
	CO4	Design and implement simple wireless and mobile network configurations.
	CO5	Discuss the challenges and emerging trends in wireless and mobile networks.

GRAPHICAL REPRESENTATION





JGI ARKA JAIN University Jharkhand	NAAC GRADE A ACCREDITED UNIVERSITY		[19-11-2025] END SEM EXAMINATION School of Engineering & IT
Program	Master of Computer Application		
Subject Name	Advance Java	Session	Odd, 2025-26
Semester	III	Year	Nov, 2025
Time: 3 Hour Max. Marks : 70	• Start writing from 2nd page onwards; don't 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 Mobile Phone or any kind of Written Material, Arguments with the Invigilator or Discussion with Co-Student will comes under Unfair Means and will Result in the Cancellation of the Paper(s).		
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating

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

Q. N 1	QUESTIONS	Marks	COs	KL
i	What are the annotations used in Servlet?	02	CO1	K1
ii	When destroy () method of servlet gets called?	02	CO2	K3
iii	How to disable session in JSP?	02	CO1	K2
iv	What is the use of <jsp: include> tag?	02	CO2	K2
v	What is Session ID?	02	CO3	K4
vi	What is Declaration Tag?	02	CO2	K4
vii	Write two basic JDBC Data types.	02	CO4	K1
viii	What is the instance of Response object?	02	CO2	K2
ix	What are Buffer and Autoflush Attribute?	02	CO1	K5
x	What is Customizers?	02	CO4	K2

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question Carry 05 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Explain the life cycle of a Java Servlet with a diagram and the purpose of each stage in the life cycle.	05	CO3	K6
3	Explain the architecture of JDBC. How does it help in connecting a Java application to a relational database?	05	CO2	K2
4	Differentiate between Servlet and JSP.	05	CO1	K1
5	What is Cookie? List out the parameters used in Cookie.	05	CO4	K6
6	What is a Java Bean? State its main features	05	CO5	K5
7	Explain with examples about Info Attribute, error Page, iserror Page Attributes, is Thread Safe Attribute	05	CO5	K3

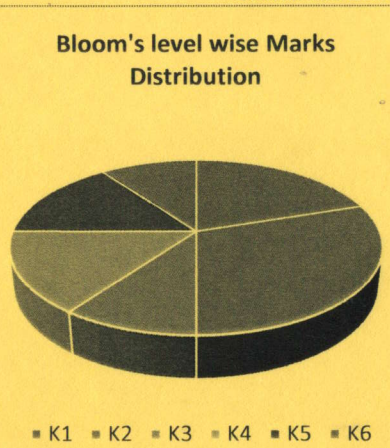
Section C (Answer any THREE out of FIVE) – 30 Marks-
(Each question Carry 10 Marks)

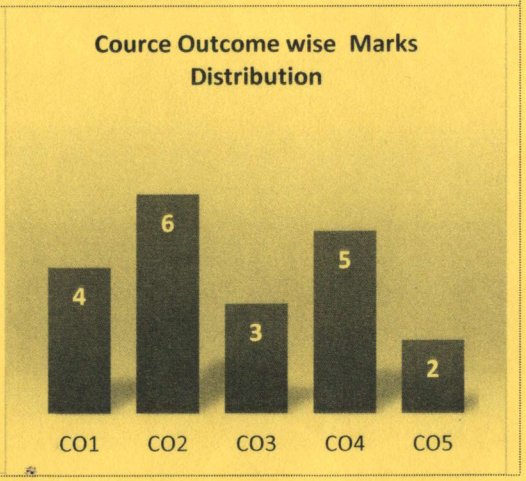
Q. No.	QUESTIONS	Marks	COs	KL
8	What is Servlet? Explain about the different packages of Servlet with its classes and interfaces.	10	CO2	K1
9	Explain the JSP life cycle with example.	10	CO4	K5
10	Discuss Cookies and Session Tracking mechanisms in Servlets with suitable examples.	10	CO4	K3
11	Explain the basic syntax of JSP scripting elements(scriptlets, declarations, and expressions).	10	CO3	K2
12	Discuss Cookies and Session Tracking mechanisms in Servlets with suitable examples	10	CO5	K4

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	Apply the concept of Servlet and its life cycle to create web application.
	CO2	Apply JSP tags and its services to web application.
	CO3	Create packages and interfaces in the web application context.
	CO4	Build Database connection for the web applications.
	CO5	Develop enterprise applications using Java Beans concepts for the given problem.

GRAPHICAL REPRESENTATION





JGI	**ARKA JAIN University** Jharkhand	NAAC GRADE A ACCREDITED UNIVERSITY	**[24-11-2025] END SEM EXAMINATION School of Engineering & IT**

Program	**Master of Computer Applications AIDL**		
Subject Name	**Predictive Analysis**	**Session**	**Odd, 2025-26**
Semester	**III**	**Year**	**Nov, 2025**
Time: 3 Hour Max. Marks : 70	• Start writing from 2nd page onwards; **don't 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 Mobile Phone** or any kind of **Written Material, Arguments with the Invigilator or Discussion with Co-Student** will comes under **Unfair Means** and will **Result** in the **Cancellation of the Paper(s)**.		
Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

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

Q. N 1	QUESTIONS	Marks	COs	KL
i	Explain the term Nodes and Stream.	02	CO2	K1
ii	Explain Super Node.	02	CO2	K1
iii	A select node does not necessarily have to be placed on the stream canvas manually, but can also be generated from a table output window. If the given statement is true then explain it.	02	CO1	K2
iv	What is caching data?	02	CO3	K1
v	Explain the matrix output with example.	02	CO3	K2
vi	Explain Binning Fields.	02	CO3	K2
vii	What is Data partitioning?	02	CO3	K2
viii	Explain Simple Sampling Method	02	CO3	K2
ix	What is Model evaluation	02	CO4	K3

x	Define space-time boxes in the context of IBM SPSS Modeler.	02	CO2	K2

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question Carry 05 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Explain the User Interface of SPSS Modeler with Diagram.	05	CO1	K2
3	Explain the different Roles defined in the type Node.	05	CO2	K2
4	How can we reclassify field's values? Explain it.	05	CO3	K3
5	Explain Classification, Segmentation and Association type of problems with examples.	05	CO4	K3
6	Explain the Date and time Functions with example	05	CO3	K3
7	Explain the Conversion Functions with example	05	CO3	K3

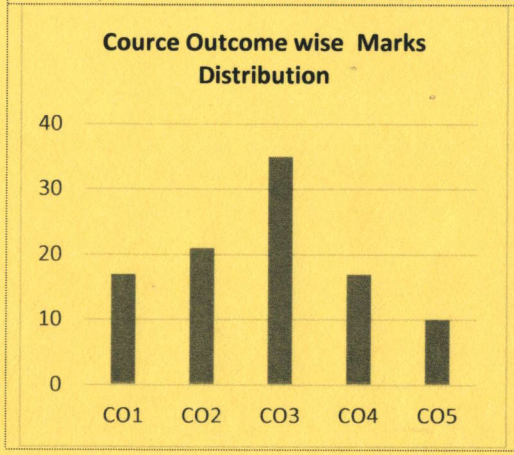
Section C (Answer any THREE out of FIVE) – 30 Marks
(Each question Carry 10 Marks)

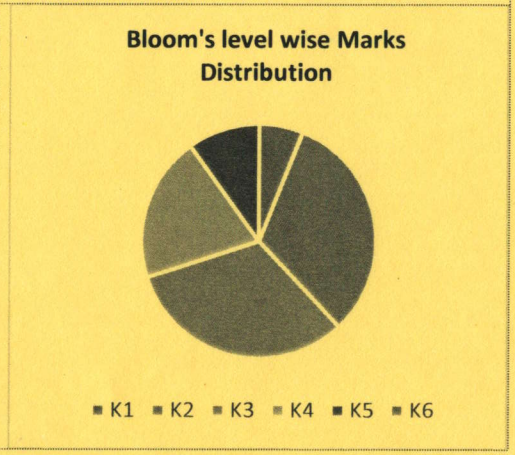
Q. No.	QUESTIONS	Marks	COs	KL
8	Compare visual analysis and statistical summary techniques.	10	CO2	K3
9	Given customer transaction data, explain how you would use SPSS Modeler to predict future purchasing behavior.	10	CO4	K4
10	List and explain three common data cleaning techniques in SPSS Modeler.	10	CO3	K4
11	Discuss the role of AI and deep learning in modern business analytics.	10	CO5	K5
12	Explain the role of CRISP-DM methodology in predictive modeling with SPSS Modeler.	10	CO1	K2

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	To provide an overview of an exciting field of Predictive Analytics.
	CO2	To introduce the tools required For Predictive Analytics.
	CO3	Review and explore data to look at data distributions and to identify data problems, including missing values.
	CO4	To enable students to have skills that will help them to solve complex real-world problems for decision support.
	CO5	To study, understand and implement each unit according to National Education Policy and Bloom's Taxonomy.

GRAPHICAL REPRESENTATION





JGI ARKA JAIN University Jharkhand	NAAC GRADE A ACCREDITED UNIVERSITY		[21-11-2025] END SEM EXAMINATION School of Engineering & IT
Program	Master of Computer Application		
Subject Name	Design and Analysis of Algorithm	Session	Odd, 2025-26
Semester	III	Year	Nov, 2025
Time: 3 Hour Max. Marks : 70	• Start writing from 2nd page onwards; **don't 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 Mobile Phone** or any kind of **Written Material, Arguments with the Invigilator or Discussion with Co-Student** will comes under **Unfair Means** and will **Result** in the **Cancellation of the Paper(s)**.		
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Section A (Each question Carry 02 Marks from Q1-i to x – 20 Marks)

Q. N 1	QUESTIONS	Marks	COs	KL
i	Find the time complexity of the following expression: $T(n) = 0.006n\log n + 0.048n^2 + 8$	02	CO2	K5
ii	What do you mean by optimal solution of a problem in greedy approach?	02	CO2	K2
iii	What do you mean by pivot element in quick sort?	02	CO1	K2
iv	What is the difference between NP hard and NP Complete problem?	02	CO4	K4
v	List the advantages of dynamic programming.	02	CO3	K1
vi	Write down the time complexity of binary search algorithm.	02	CO2	K3
vii	Give two examples of divide and conquer algorithm.	02	CO3	K5
viii	Define space complexity.	02	CO1	K1
ix	Provide three factors to examine the efficiency of an algorithm.	02	CO3	K3
x	What do you mean by Pseudo code? Give an example.	02	CO2	K2

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question Carry 05 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Write in detail about Hamiltonian circuit problem. Give an example to it.	05	CO3	K3
3	Write a short note on Dijkstra's algorithm.	05	CO4	K2
4	Simulate Quick sort algorithm for the following example: 5,3,8,6,4,7,3,1	05	CO2	K6

5	What do you mean by time complexity? Find the time complexity of the following code:
	
	void fun(int n)
	{
	for (int i = 0; i <= n / 3; i++)
	for (int j = 1; j <= n; j = j + 4)
	printf("ARKA JAIN UNIVERSITY");
	}
		05	CO1	K1

6	Explain Merge sort technique. Give the time complexity of merge sort.	05	CO3	K4
7	Differentiate between algorithm and pseudo code.	05	CO2	K3

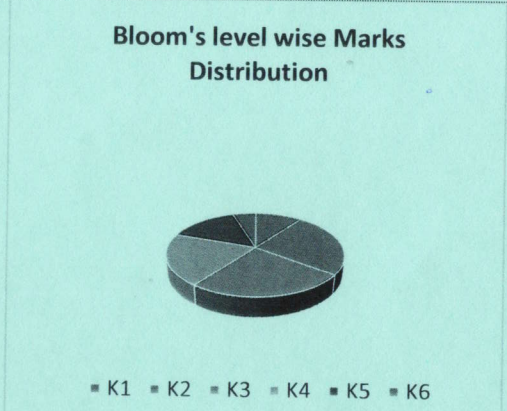
Section C (Answer any THREE out of FIVE) – 30 Marks
(Each question Carry 10 Marks)

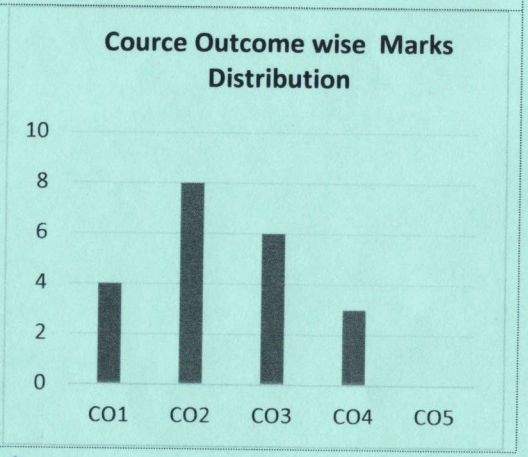
Q. No.	QUESTIONS	Marks	COs	KL
8	What is dynamic programming method? How it is different from backtracking? Explain with the help of an example.	10	CO2	K4
9	What is Divide and Conquer algorithm? Explain it with the help of following data set. 46,33,13,55,77,90,40,60,99,22,87	10	CO3	K4
10	What is asymptotic notation? Classify and explain.	10	CO1	K5
11	Illustrate Travelling Salesperson Problem (TSP) using Branch and Bound.	10	CO4	K2
12	Explain the binary search algorithm considering one example and write the algorithm for it.	10	CO2	K3

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	Categorize problems based on their characteristics and practical importance.
	CO2	Develop Algorithms using iterative/recursive approach.
	CO3	Design algorithm using an appropriate design paradigm for solving a given problem.
	CO4	Classify problems as P, NP or NP Complete.
	CO5	Analyze algorithms using iterative/recursive approach

GRAPHICAL REPRESENTATION





JGI	**ARKA JAIN University** Jharkhand	NAAC GRADE A ACCREDITED UNIVERSITY	**[26-11-2025] END SEM EXAMINATION School of Engineering & IT**	
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