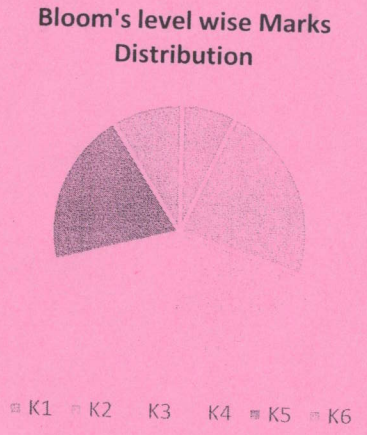
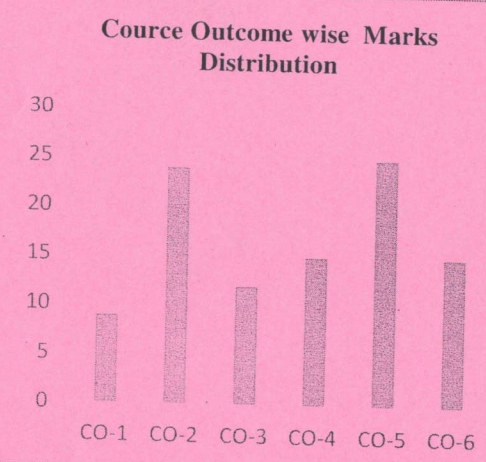
CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	Identify special features introduced in C++ when compared to C and illustrate the difference between structure and class using C++ program.
	CO2	Apply the Concepts of inheritance, polymorphism for the given problem and develop C++ program.
	CO3	Implement the concept of overloading, default parameters, Constructors and destructors in a C++ program.
	CO4	Analyze the working of I/O operations with C++ files.
	CO5	Demonstrate the Exception handling and template for a given problem.
	CO6	Demonstrate the concepts of data abstraction, information hiding and encapsulation by writing C++ program.

GRAPHICAL REPRESENTATION





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17/01/25

ARKA JAIN University Jharkhand — NAAC GRADE A

END SEM EXAMINATION
School of Engineering & IT

Program	Master of Computer Application		
Subject Name	Basics of Programming Languages	Semester	I
		Year	January, 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	Define Encapsulation and Data hiding.	02	CO3	KL3
ii	What is a class in C++?	02	CO1	KL4
iii	What is constructor?	02	CO2	KL1
iv	What is null pointer?	02	CO2	KL1
v	What is a nested loop?	02	CO4	KL3
vi	How do you define a structure in C?	02	CO4	KL2
vii	What is the restriction on operator overloading?	02	CO5	KL1
viii	What is the purpose of a try-catch block?	02	CO6	KL6
ix	What is the purpose of the scope resolution operator (::)?	02	CO6	KL2
x	Explain the concept of dereferencing a pointer.	02	CO5	KL5

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

Q. No.	QUESTIONS	Marks	COs	KL
2	What is pointer? Explain how the pointer variable declared and initialized.	05	CO2	KL2
3	Describe the dynamic memory allocation functions in C (malloc, calloc, realloc, free) with examples.	05	CO6	KL1
4	Explain the difference between structures and unions with an example. Write a program demonstrating how memory is shared in a union.	05	CO3	KL3
5	What is data hiding? What are the different Mechanism for protecting the data from external users of the class object?	05	CO4	KL6
6	Define array? How to Find the Length of an Array in C Using the sizeof() Operator	05	CO5	KL4
7	Develop a program that uses a switch statement to perform arithmetic operations (addition, subtraction, multiplication, division) based on user input.	05	CO1	KL5

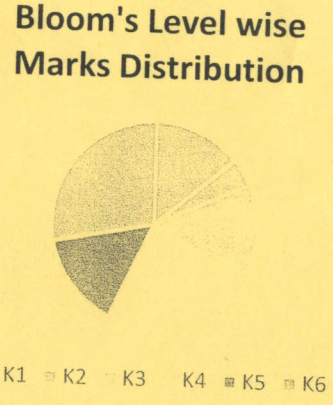
Section C (Answer any THREE out of FIVE) – 30 Marks
(Each question Carry 10 Marks)

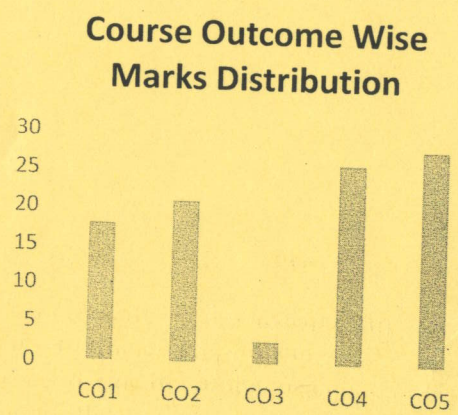
Q. No.	QUESTIONS	Marks	COs	KL
8	Explain the different types of loops in C with syntax.	10	CO3	KL2
9	What Is the C Programming Language? A Brief History of the C Programming Language.	10	CO1	KL3
10	Write a program that uses a structure within another structure (nested structures). What is a union in C? Explain with an example program.	10	CO2	KL6
11	Write a C++ program to handle multiple exceptions for division by zero and invalid input type during arithmetic operations.	10	CO6	KL1
12	Define a class to represent a bank account. Include the following members: Data members: 1) Name of the depositor 2) Account number 3) Type of account 4) Balance amount in the account Member Function: 1) To assign initial values 2) To deposit an amount 3) To withdraw an amount after checking the balance 4) To display name and balance. Write a main program to test the program.	10	CO5	KL1

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

Course Outcomes	CO1	Identify the suitable research methods and articulate the research steps in a proper sequence for the given problem.
	CO2	Carry out literature survey, define the problem statement and suggest suitable solution for the given problem.
	CO3	Analyse the problem and conduct experimental design with the samplings.
	CO4	Perform the data collection from various sources segregate the primary and secondary data
	CO5	Apply some concepts/section of Copy Right Act /Patent Act /Cyber Law/ Trademark to the given case and develop – conclusions

GRAPHICAL REPRESENTATION





20/01/25

ARKA JAIN University Jharkhand — NAAC GRADE A

END SEM EXAMINATION
School of Engineering & IT

Program	Master of Computer Application		
Subject Name	Research Methodology and IPR	Semester	I
		Year	January, 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 is the objective of Research?	02	CO1	K1
ii	What do you mean by primary data?	02	CO4	K3
iii	What is hybrid Plagiarism?	02	CO5	K2
iv	What do you mean by Intellectual Property?	02	CO3	K2
v	Which tool is used for Plagiarism checking?	02	CO4	K4
vi	What is Research Methodology?	02	CO1	K5
vii	What do you mean by 404 error plagiarism?	02	CO2	K2
viii	What is research ethics?	02	CO3	K3
ix	What do you mean by Research process?	02	CO5	K3
x	Explain the importance of Research design?	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	What is research report? Explain the mechanics of writing a research report.	05	CO1	K6
3	Discuss the importance of aligning research objectives with problem statements in the initial stages of research?	05	CO5	K6
4	Analyse the role of literature review in identifying research gaps and forming the theoretical framework. How does it support the argument of the research?	05	CO4	K5
5	What is the importance of research ethics? Explain in detail.	05	CO2	K3
6	What are the tips to avoid plagiarism? Differentiate between Research Method and Research Methodology in detail.	05	CO4	K1
7	What is sampling? What are the merits and demerits of Sampling?	05	CO1	K2

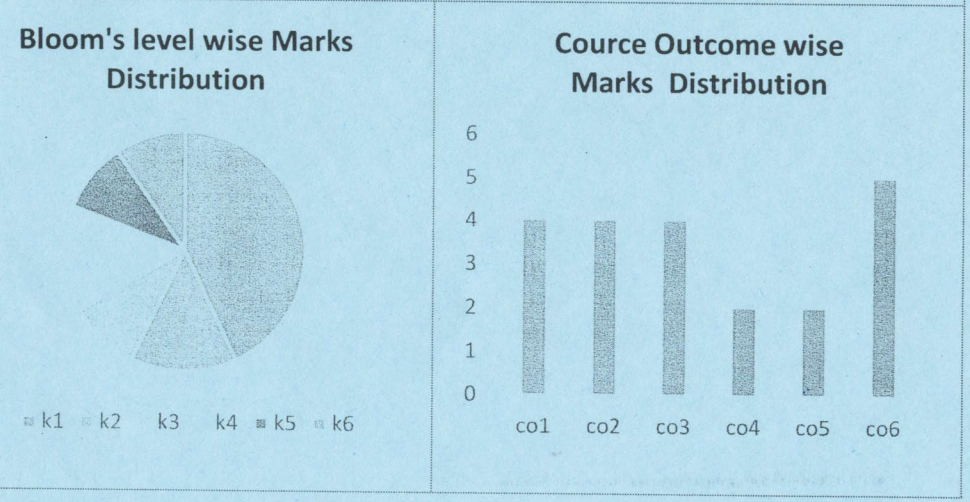
Section C (Answer any THREE out of FIVE) – 30 Marks
(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
8	What is Intellectual Property? What are the types of IP? Explain in details.	10	CO5	K3
9	What are the problems encountered by researchers in India? What are the qualities of good research?	10	CO5	K1
10	What is the difference between contextual finding and existing literature? What is the necessity of defining a problem?	10	CO2	K2
11	What are the types of Plagiarism? Explain each in Detail.	10	CO4	K3
12	Evaluate the challenges and solutions associated with writing a comprehensive research report in qualitative research.	10	CO1	K4

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

Course Outcomes	CO1	Understand and apply fundamental concepts of discrete mathematics, including sets, relations, functions, and logic, to solve problems in computer science.
	CO2	Analyze and design algorithms using mathematical techniques, such as combinatory, graph theory, and number theory, and evaluate their time and space complexity.
	CO3	Understand the theoretical foundations of formal languages and automata theory and their relevance to programming languages, compilers, and computational models.
	CO4	Develop proficiency in using mathematical reasoning and proof techniques to construct rigorous arguments and validate computational solutions.
	CO5	Recognize and appreciate the role of mathematics in various areas of computer science, including cryptography, network algorithms, and formal methods.
	CO6	Demonstrating strong communication, problem-solving, and decision-making skills.

GRAPHICAL REPRESENTATION



22/01/25

ARKA JAIN University Jharkhand — NAAC GRADE A — ACCREDITED UNIVERSITY

END SEM EXAMINATION
School of Engineering & IT

Program	**Master of Computer Application**		
Subject Name	**Mathematical Foundation For Computer Application**	**Semester**	**I**
		Year	**January, 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	Define logic Statement.	02	CO1	K2
ii	Define Normal Subgroups.	02	CO3	K1
iii	Explain De Morgan's laws.	02	CO1	K5
iv	Explain Hasse Diagram.	02	CO4	K6
v	Define Semi group and give the example of semi group.	02	CO3	K1
vi	Define Monoid and give an example.	02	CO3	K1
vii	What is the cyclic group?	02	CO3	K1
viii	What is the Permutation group?	02	CO6	K3
ix	What is meant by recursive function?	02	CO2	K4
x	Define Lattices theory in Mathematics.	02	CO5	K1

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

Q. No.	QUESTIONS	Marks	COs	KL
2	Show that $[(p \rightarrow q) \wedge \sim q] \rightarrow \sim p$ is a tautology.	05	CO1	K6
3	What is the recursive function of the Fibonacci sequence?	05	CO2	K2
4	Explain Recurrence relations.	05	CO1	K1
5	Prove that the sum of cubes of n natural numbers is equal to $([n (n+1)]/2)^2$ for all nnatural numbers.	05	CO2	K4
6	Write the Properties of Lattice Theory.	05	CO6	K2
7	What is a Partial Order Relation? And Properties of Partial Order Relation.	05	CO6	K1

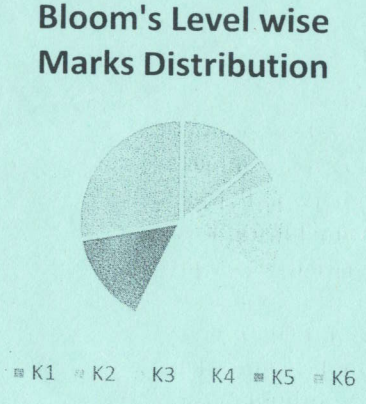
Section C (Answer any THREE out of FIVE) – 30 Marks
(Each question Carry 10 Marks)

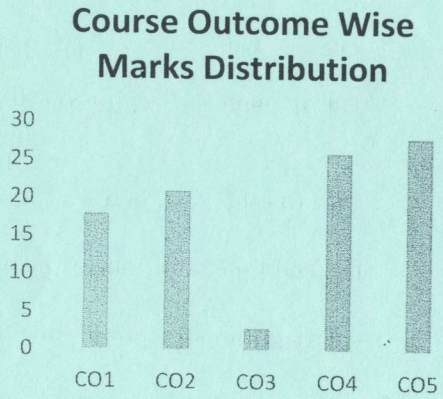
Q. No.	QUESTIONS	Marks	COs	KL
8	Explain Cosets and Lagrange Theorem,	10	CO6	K1
9	How many 3-digit numbers can be formed from the 6 digits 2, 3, 5,7,8,9 if repetitions are not allowed? How many of these numbers are less than 400?How many are even?	10	CO6	K5
10	Using the principle of mathematical induction, prove that$1^2 + 2^2 + 3^2 +$ $+ n^2 = (1/6)\{n(n + 1)(2n + 1\}$ for all $n \in N$.	10	CO5	K4
11	Write Characteristics and Importance of Primitive Recursive Functions.	10	CO2	K1
12	Draw Hasse diagram for ({3, 4, 12, 24, 48, 72}, /)	10	CO4	K3

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

Course Outcomes	CO1	Develop proficiency in shell scripting to automate tasks, manipulate files, and manage System resources effectively.
	CO2	Apply knowledge of operating system principles to solve real-world problems related to process management, memory allocation, and file system operations.
	CO3	Explore the internals of the Unix/Linux operating system, including system calls, Kernel modules, and system configuration files.
	CO4	Learn and apply best practices in shell scripting, including code readability, Documentation, error handling, and version control.
	CO5	Develop a curiosity for learning and exploring new technologies and concepts related to Operating systems, shell programming, and system administration.

GRAFICAL REPRESENTATION





24/01/25

ARKA JAIN University Jharkhand — NAAC GRADE A

END SEM EXAMINATION
School of Engineering & IT

Program	Master of Computer Application		
Subject Name	Operating System and Shell Programming	Semester	I
		Year	January, 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	PO
i	What is a process in an operating system?	2	CO1	K1	PO1
ii	What is the critical section problem?	2	CO2	K2	PO2
iii	What is contiguous allocation?	2	CO2	K4	PO5
iv	What is Belady's anomaly?	2	CO4	K5	PO6
v	What is disk recovery?	2	CO3	K3	PO4
vi	What is system protection?	2	CO2	K3	PO3
vii	What does the 'ls' command do in Linux?	2	CO3	K2	PO2
viii	What does the 'who' command display?	2	CO4	K3	PO1
ix	What is a shell in Linux?	2	CO3	K2	PO5
x	What is a Process Control Block (PCB)?	2	CO3	K1	PO6

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	What are the major activities of an operating systems with regard to process management?	5	CO3	KL4	PO2
3	Explain the concept of conditional statements in shell scripts. How do you implement decision-making using if-else, elif-fi, and case-esac?	5	CO4	KL1	PO5
4	What is Vi editor? Explain various commands to use it.	5	CO2	KL2	PO6
5	What are the file permission in Linux operating system? With suitable example.	5	CO1	KL4	PO7
6	How does Linux differ from proprietary operating systems like Windows or macOS in terms of file system structure, user permissions, and security models?	5	CO3	KL3	PO9
7	What are different methods for handling deadlocks?	5	CO4	KL2	PO2

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

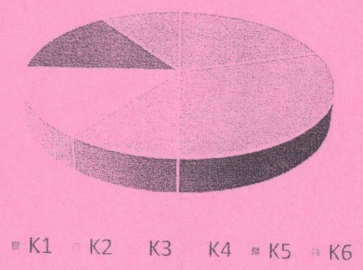
Q. No.	QUESTIONS	Marks	COs	KL	PO
8	What is the important feature of critical section? State the Readers Writers problem and give solution using semaphore.	10	CO2	KL2	PO9
9	Explain about the following page replacement algorithms a)FIFO b)Optimal, c)LRU , With given reference string : - 5 0 2 1 0 3 4 3 0 3 2 1 3 0 1 5, with frame size as 3, Which one is the best page replacement algorithms?	10	CO3	KL4	PO7
10	What are the process scheduling algorithms with example? Consider the following five processes, with the length of the CPU burst time given in milliseconds. Process AT BT P1 1 5 P2 2 8 P3 3 3 P4 4 7 P5 5 6 Consider the First come First serve (FCFS), Non Pre-emptive Shortest Job First (SJF), Round Robin (RR) (quantum= 2 ms) scheduling algorithms. Illustrate the scheduling using Gantt chart. Which algorithm will give the minimum average waiting time? Discuss.	10	CO2	KL6	PO8
11	Explain the major functions of an operating system, including process management, memory management, file system management, and security, with relevant examples for each function.	10	CO6	KL2	PO3
12	Explain the concept of open-source software. How does the GNU movement contribute to Linux and its development?	10	CO6	KL5	PO5

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

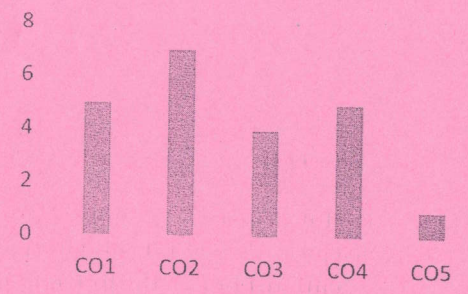
Course Outcomes	CO1	Demonstrate the basic programming constructs of Java and OOP concepts to develop Java programs for a given scenario.
	CO2	Illustrate the concepts of generalization and run time polymorphism applications to develop reusable components.
	CO3	Exemplify the usage of Packages, Interfaces, Exceptions and Multithreading in building efficient applications.
	CO4	Apply Enumerations, Wrappers, Auto boxing, Collection framework and I/O operations for effective coding.
	CO5	Implement the concepts of Applets, and networking using Java network classes for distributed applications

GRAPHICAL REPRESENTATION

Bloom's level wise Marks Distribution



Course Outcome wise Marks Distribution



28/01/25

ARKA JAIN University Jharkhand — NAAC GRADE A — ACCREDITED UNIVERSITY

END SEM EXAMINATION
School of Engineering & IT

Program	**Master of Computer Application**		
Subject Name	**Object Oriented Programming and Design(Java)**	**Semester**	**I**
		Year	**January, 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	Define Class, Method and Object? Show the syntax to define these in java.	02	CO1	K1
ii	Write a java program to interchange the values without using temporary variable.	02	CO2	K3

iii	What is the output of the given code?
	public class A
	{
	public static void main(String[] args)
	{
	System.out.println('j' + 'a' + 'v' + 'a');
	}
	}
		02	CO1	K2

iv	How dynamic initialization of variables is achieved in java?	02	CO2	K2
v	What is an abstract class?	02	CO3	K4
vi	What is the difference between static and non-static variables?	02	CO2	K4
vii	What are the benefits of encapsulation? Should abstractions be user centric or developer centric?	02	CO4	K1
viii	What are key characteristics of objects?	02	CO1	K5

ix	What is the output of the given code?
	class Test {
	protected int x, y;
	}
	
	class Main {
	public static void main(String args[]) {
	Test t = new Test();
	System.out.println(t.x + " " + t.y);
	}
	}
		02	CO4	K2

x	What is the difference between compile time and run time error?	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 a program to implement the Fibonacci series using for loop control structure.	05	CO2	K2
3	Write a java program to implement multilevel inheritance concept.	05	CO3	K6
4	What is an interface? List the rules to create an interface in java with example.	05	CO4	K1
5	Differentiate between JRE and JVM in details.	05	CO2	K6
6	Explain applet life cycle with suitable diagram.	05	CO5	K5
7	Construct a Java program to showcase the functionality of bitwise operators.	05	CO1	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 byte code? Interpret the different states of java program execution?	10	CO1	K1

9	class AJU {
	public static void main(String[] args) {
	int num1 = 245;
	int num2 = 145;
	int res = (num1 > num2) ? (num1 + num2) : (num1 - num2);
	System.out.println(res);
	}
	}
	What is the value of res after executing the code? Describe the purpose of the ternary operator used in this code. What would happen if num2 were set to 265 instead? What would the new value of res?
		10	CO4	K5

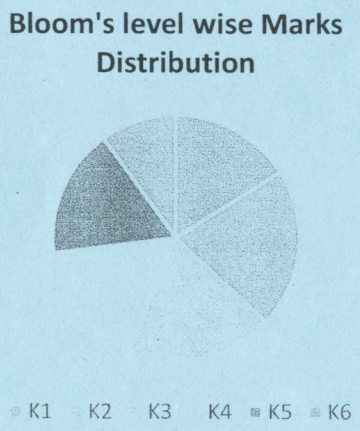
10	Compare Method Overriding and Method Overloading with the help of an example.	10	CO2	K3
11	What is Inheritance? Illustrate the types of inheritances.	10	CO4	K2
12	What is package? Explain how to create user defined package in java with an example.	10	CO3	K4

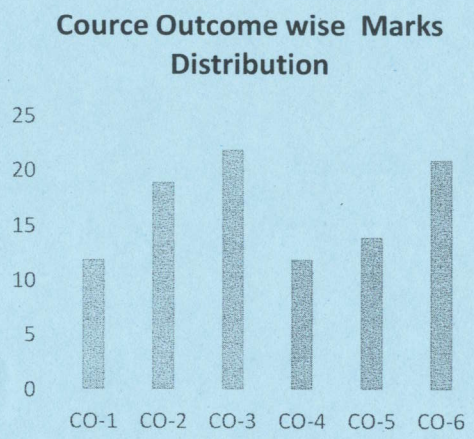
30/01/25

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

Course Outcomes	CO1	Understand fundamental analytics principles.
	CO2	Utilize IBM Cognos Analytics proficiently for data analysis and reporting.
	CO3	Master IBM Cognos Analytics and Excel, enabling effective navigation, template authoring, and report execution for finance and business applications.
	CO4	Develop advanced data analysis and visualization skills, utilizing techniques in report authoring, data exploration, and visualization tools for comprehensive insights.
	CO5	Excel in addressing business challenges by leveraging Power BI, IBM Cognos Analytics, and Excel, connecting data sources and implementing hierarchical drill-down techniques.
	CO6	Implement predictive analytics techniques for forecasting and optimization.

GRAPHICAL REPRESENTATION





ARKA JAIN University Jharkhand — NAAC GRADE A — ACCREDITED UNIVERSITY

END SEM EXAMINATION
School of Engineering & IT

Program	Master of Computer Application		
Subject Name	Data Visualization	Semester	I
		Year	January, 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**
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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	How can big data and analytics help in understanding consumer/customer behaviour?	02	CO1	K3
ii	What groups and roles are provided by default in IBM Cognos Analytics?	02	CO2	K1
iii	What are crosstab reports?	02	CO4	K1
iv	Reports can run in limited interactivity or full interactivity mode. Which report property would you specify for it in Cognos? What will happen after setting this property?	02	CO2	K5
v	What does OLAP stand for? What is its role in analytics?	02	CO6	K2
vi	When would you use AVERAGEIF function in MS Excel?	02	CO3	K3
vii	What is Power Query Editor? Which phase of ETL process does the Power Query Editor help in?	02	CO5	K2
viii	What do you understand by the terms slice and dice?	02	CO6	K2
ix	Predictive analytics can be useful in law enforcement. Explain the given statement.	02	CO6	K4
x	Give four examples of the data sources that can be connected to in Power BI?	02	CO5	K1

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

Q. No.	QUESTIONS	Marks	COs	KL
2	You have a personal data source, a file in MS Excel format. How would you create a report from the file in IBM Cognos?	05	CO2	K6
3	In order to showcase the grouped data in Cognos report, how will you distinguish between detail aggregation and summary aggregation?	05	CO4	K5
4	Exemplify and differentiate between the usage of various count functions available in Excel.	05	CO3	K2
5	What do you understand by RAVE? How are RAVE visualizations better than the traditional charts.	05	CO4	K4
6	XLOOKUP function is said to be quite powerful as compared to VLOOKUP or HLOOKUP. Justify the given statement using examples.	05	CO3	K3
7	Build a three tier architecture of IBM planning analytics.	05	CO6	K6

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

Q. No.	QUESTIONS	Marks	COs	KL
8	A healthcare provider is facing increasing costs and patient dissatisfaction due to long wait times and inefficient resource allocation. How can the healthcare provider make use of data analytics and its types to improve efficiency and patient satisfaction?	10	CO6	K2
9	Describe five different chart types available in Power BI that can be used to visualize data. Provide examples of when each chart type would be most effective.	10	CO2	K1
10	How can IBM Cognos Analytics help a corporation to address its business intelligence needs? What specific features of IBM Cognos Analytics can be used to extract valuable insights from their data.	10	CO1	K4
11	How can you perform financial modelling in MS Excel? What elements will be required to perform this task?	10	CO3	K5
12	Which business challenges can be overcome by using Power BI? Specify the purpose of various tools in the architecture of Power BI available in the market?	10	CO5	K3