

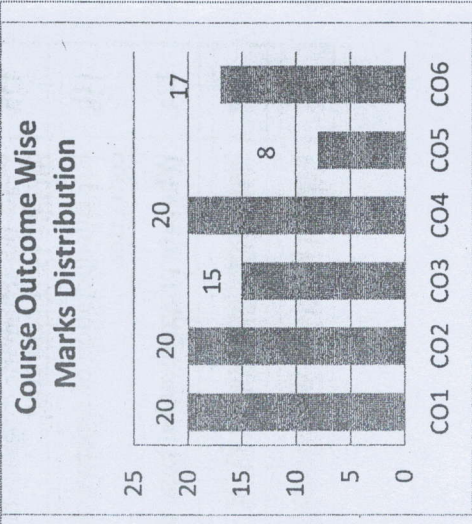
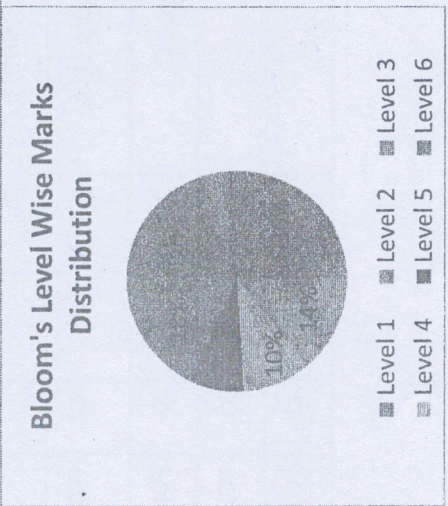
CO- Course Outcomes,

KL- Knowledge Level,

PO – Program Outcome

CO1	Understand working of logic families and logic gates.
CO2	Design and implement Combinational and Sequential logic circuits
CO3	Understand the process of Analog to Digital conversion and Digital to Analog conversion.
CO4	Examine the structure of various number systems and its application in digital design
CO5	Interpret the use of PLDs to implement the given logical problem.

**GRAFICAL REPRESENTATION**



		<b>ARKA JAIN University</b> Jharkhand		<b>END TERM EXAMINATION</b> School of Engineering & IT	
Subject Name		Computer Science & Engineering	B.Tech	3rd	
Digital Electronics			Semester	2023/Odd	
Time: 3 Hour Max. Marks : 70		<ul style="list-style-type: none"> <li>Start writing from 2nd page onwards; don't Write on the 1st Page Backside</li> <li>Answer all Questions of Section A (Compulsory)</li> <li>Answer Any Four out of Six of Section B</li> <li>Answer Any Three out of Five of Section C</li> <li>Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will come under Unfair Means and will Result in the Cancellation of the Papers.</li> </ul>			
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 Q1-x) – 20 Marks**

Q. N1	QUESTIONS	Marks	COs	KL	PO
i	Why BCD codes are use for decimal numbers in digital systems?	2	CO1	K1	PO1
ii	Draw the truth table for three input AND GATE?	2	CO1	K2	PO2
iii	What are the rules for getting the minimal Boolean function using K - maps?	2	CO2	K2	PO1
iv	Compute uses of multiplexer?	2	CO2	K3	PO2
v	Write the behaviour of R S flip-flop with NAND latch.	2	CO3	K4	PO4
vi	Draw D flip-flop with NAND latch.	2	CO3	K6	PO3
vii	Compare between the asynchronous and synchronous counters?	2	CO4	K5	PO5
viii	Demonstrate performance criteria for the D/A converter?	2	CO4	K3	PO4
ix	List the application of various types of ROM?	2	CO5	K1	PO1
x	What are the sizes of MAR and MBR for a 64K x 8 bit memory?	2	CO5	K1	PO1

**Section B (Answer any FOUR out of SIX) - 20 Marks-**  
(Each question Carry 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
2a	Describe the gray code.	3	CO1	K3	PO1
2b	What are characteristics of gray code?	2	CO1	K2	PO2
3a	Write operation full adder?	2	CO2	K6	PO5
3b	Design the Full adder using NOR gates only?	3	CO2	K2	PO5
4a	Describe the working of edge trigger T flip-flop.	3	CO3	K2	PO5
4b	How a T flip-flop be used as divide-by-two device?	2	CO3	K4	PO2
5a	Explain the meaning of counter.	2	CO4	K2	PO2
5b	Draw the circuit of a 4-stage ripple counter and show the waveform at the various output stages.	3	CO4	K6	PO3
6a	Discuss the simultaneous A/D converter to convert 0 to V volts analog voltage to 3 bit digital output.	3	CO4	K4	PO5
6b	Draw the logic diagram also.	2	CO4	K6	PO3
7a	What is a memory unit?	2	CO5	K1	PO1
7b	Explain with block diagram the concept of memory using registers connected to memory unit.	3	CO5	K2	PO5

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

Q. No.	QUESTIONS	Marks	COs	KL	PO
8a	Solve the following decimal numbers to gray code: (i) 8975 (ii) 23501	5	CO1	K4	PO4
8b	Solve the following decimal numbers to XS3 (excess -3) code: (i) 1026 (ii) 4375	5	CO1	K4	PO4
9a	Solve the following decimal numbers into octal numbers.	4	CO2	K4	PO4

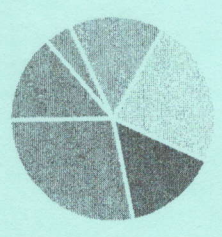
	(i) 4537.362	(ii) 7192.0			
9b	Minimize the following function using K-map and realize it with AND, OR & NOT logic gates.	6	CO2	K3	PO4
10a	Discuss K-map method of reduction the Boolean function of five variables. $F(A, B, C, D) = \sum(0,1,2,5,8,10,11,14)$	6	CO3	K5	PO1
10b	Express the following Boolean function in SP form. $F = A \cdot B + C$	4	CO3	K2	PO3
11a	Draw the schematic diagram of a resistive divider D/A converter.	4	CO4	K6	PO3
11b	Explain operation of resistive divider D/A converter.	6	CO4	K2	PO2
12a	What are programmable logic devices?	2	CO5	K1	PO1
12b	Name popularly known PLDs.	2	CO5	K1	PO1
12c	Explain ROM as a PLD in detail.	6	CO5	K2	PO2

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

CO1	Analyse the algorithms to determine the time and computation complexity and justify the correctness.
CO2	Design and implement data structures related to search problems.
CO3	For a given problem of Stacks, Queues and linked list implement and analyse to determine the time and computation complexity.
CO4	Understand logic behind various sorting algorithms and compute the time complexity
CO5	Learn and implement Graph search and traversal algorithms and determine the time and computation complexity. Learn and implement Graph search and traversal algorithms and determine the time and computation complexity.

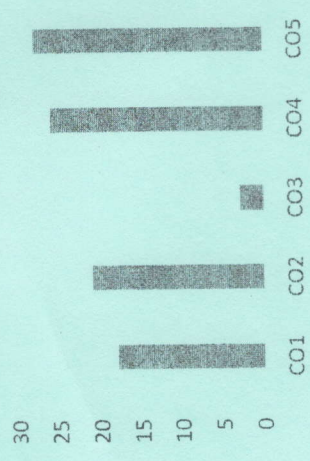
**GRAFICAL REPRESENTATION**

**Bloom's Level wise Marks Distribution**



■ K1 ■ K2 ■ K3 ■ K4 ■ K5 ■ K6

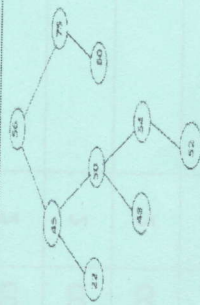
**Course Outcome Wise Marks Distribution**



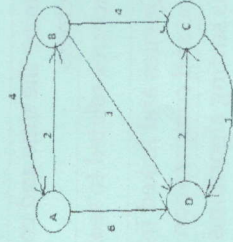
**ARKAJAIN University**  
Jharkhand

Branch	Computer Science & Engineering	Program	B.TECH
Subject Name	Data Structure	Semester	3rd
		Year	2023/Odd
Time: 3 Hour Max. Marks : 70	<ul style="list-style-type: none"> <li>Start writing from 2nd page onwards; don't Write on the 1st Page Backside</li> <li>Answer all Questions of Section A (Compulsory)</li> <li>Answer Any Four out of Six of Section B</li> <li>Answer Any Three out of Five of Section C</li> <li>Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will come under <u>Unfair Means</u> and will <u>Result</u> in the <u>Cancellation of the Papers.</u></li> </ul>		
Knowledge Level (KL)	K1 : Remembering K2 : Understanding	K3 : Applying K4 : Analysing	K5 : Evaluating K6 : Creating

Section A (Each question Carry 02 Marks from Q1-i to Q1-x) – 20 Marks			
Q. N 1	QUESTIONS	Marks	COs KL PO
i	What is Linear data structure? Give example.	2	CO1 K1 PO2
ii	Explain FIFO data structure.	2	CO2 K1 PO2
iii	Define Big-oh notation with proper diagram.	2	CO3 K2 PO2
iv	Write the algorithm for PUSH operation in a STACK.	2	CO1 K1 PO4
v	What is Circular Queue? Analyse the advantages of Circular queue over normal queue?	2	CO3 K2 PO2
vi	What is dynamic memory allocation? Give example.	2	CO3 K4 PO2
vii	What is garbage collection?	2	CO3 K2 PO5
viii	Define Articulation point in a graph.	2	CO3 K1 PO5
ix	What is Doubly linked list?	2	CO5 K2 PO5
x	What is connected graph?	2	CO3 K1 PO4

Section B (Answer any FOUR out of SIX) - 20 Marks (Each question Carry 5 Marks)					
Q. No.	QUESTIONS	Marks	COs	KL	PO
1	Determine the time complexity of following function in Big-oh notation. $f(n) = 4n^3 + n^2 + 7n$	5	CO1	K3	PO2
2	Analyse the following arithmetic operation is parenthesized matched or not $[(a+b)*c]+[(p+q)]$	5	CO3	K4	PO3
3	Write a program in C for performing Insertion Sort.	5	CO4	K1	PO2
4	Derive an algorithm for queue insertion and deletion.	5	CO3	K2	PO2
5	Reconstruct a tree with the help of following traversal: Pre-order: A B D H E C F G In-Order: D H B E A F C G	5	CO5	K6	PO4
6	Write an algorithm for inserting a new node at the beginning of a linked list.	5	CO3	K6	PO5
Section C (Answer any THREE out of FIVE) - 30 Marks- (Each question Carry 10 Marks)					
Q. No.	QUESTIONS	Marks	COs	KL	PO
1	Write a program in C/algorithm for performing Binary Search.	10	CO2	K3	PO2
2	Convert the following infix expression into its corresponding postfix form $a+b*c+(d*e+f)*g$	10	CO3	K5	PO4
3	Create a binary search tree with the following data J R D T G E A M H F Q U B	10	CO5	K6	PO5
4		10	CO5	K6	PO4

Delete the node 50 from the Binary Search Tree & Draw the tree.



Draw the adjacency matrix for the given directed weighted graph.

5

10

CO5

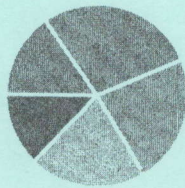
K5

PO5

CO- Course Outcomes,	KL- Knowledge Level,	PO – Program Outcome
CO1	Define what constitutes Professional practice and the respective roles of various stakeholders.	
CO2	Make the students execute the types of roles they are expected to play in the society as practitioners of Civil Engineering profession.	
CO3	Examine the utility of Contracts and Contract Management in Civil Engineering, Dispute Resolution mechanisms, and Laws governing Engagement of Labour.	
CO4	Evaluate the different Intellectual Property Rights, Patents etc.	
CO5	Develop good ideas of the legal and practical aspects of their profession	

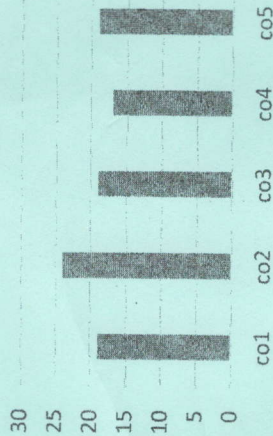
**GRAPHICAL REPRESENTATION**


**Blooms Level Wise Marks Distribution**



■ K1 ■ K2 ■ K3 ■ K4 ■ K5

**Course Outcome Wise Marks Distribution**



 <b>ARKAJAIN University</b> Jharkhand		<b>END TERM EXAMINATION</b> School of Engineering & IT	
Branch	Computer Science & Engineering	Program	B.Tech
Subject Name	Professional Practise, Law & Ethics	Semester	3rd
		Year	2023/Odd
Time: 3 Hour	<ul style="list-style-type: none"> <li>Start writing from 2nd page onwards; don't Write on the 1st Page Backside</li> <li>Answer all Questions of Section A (Compulsory)</li> <li>Answer Any Four out of Six of Section B</li> <li>Answer Any Three out of Five of Section C</li> <li>Possession of <u>Mobile Phones</u> or any kind of <u>Written Material, Arguments with the Invigilator or Discussing with Co-Student</u> will come under <u>Unfair Means</u> and will <u>Result in the Cancellation of the Papers.</u></li> </ul>		
Max. Marks : 70			
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating
<b>Section A (Each question Carry 02 Marks from Q1-i to Q1-x) – 20 Marks</b>			
Q. N1	QUESTIONS	Marks	COs
i	Define the word Ethics.	2	CO1 K1
ii	In which year Indian Contract Act was established?	2	CO1 K2
iii	How many sections are there in the Indian Contract Act?	2	CO2 K4
iv	Business Ethics is also known as..... Fill in the blanks.	2	CO3 K5
v	What is voidable contract?	2	CO5 K3
vi	What tone is used in written correspondence?	2	CO5 K2
vii	Define Express Contract.	2	CO4 K1
viii	What is e-contract?	2	CO5 K3
ix	What is bribe?	2	CO2 K4
x	What is workplace negligence?	2	CO3 K2

**Section B (Answer any FOUR out of SIX) – 20 Marks**

(Each question 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	What do you mean by Hippocratic Oath? Give one example.	5	CO2	K1	PO5
3	Who is a whistle blower?	5	CO2	K2	PO6
4	What are the essential components of Professional Ethics?	5	CO3	K3	PO7
5	When an agreement can become a contract?	5	CO4	K4	PO4
6	What factors can influence personal ethics?	5	CO5	K1	PO3
7	What is Quasi Contract?	5	CO1	K2	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 environmental protection? Explain the types of environmental protection.	10	CO2	K2	PO2
9	What do you mean by internet piracy? Explain its solution too.	10	CO3	K4	PO3
10	What are the benefits of RERA Act?	10	CO5	K3	PO4
11	What is patent? What are the types of patent?	10	CO1	K6	PO5
12	Write a brief note on Prohibited Labour Laws.	10	CO4	K5	PO6

CO- Course Outcomes,

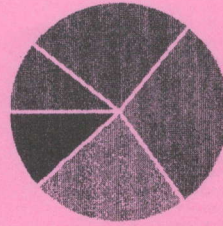
KL- Knowledge Level,

PO – Program Outcome

CO1	To interpret the fundamental Python syntax and semantics and be fluent in the use of Python control flow statements.
CO2	The student will be able to express proficiency in the handling of strings and functions.
CO3	Determine the methods to create and manipulate Python programs by utilizing the data structures like lists, dictionaries, tuples and sets.
CO4	Design and identify the commonly used operations involving file systems and regular expressions.
CO5	To articulate the Object-Oriented Programming concepts such as encapsulation, inheritance and polymorphism as used in Python.

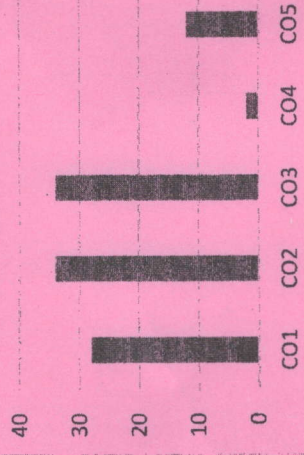
**GRAPHICAL REPRESENTATION**


**Bloom's Level wise Marks Distribution**



■ K1 ■ K2 ■ K3 ■ K4 ■ K5

**Course Outcome Wise Marks Distribution**



 <b>ARKAJAIN University</b> Jharkhand		<b>END TERM EXAMINATION</b> School of Engineering & IT	
Subject Name	Python Programming	Program	B.Tech
		Semester	3rd
		Year	2023/Odd
Time: 3 Hour Max. Marks : 70	<ul style="list-style-type: none"> <li>Start writing from 2nd page onwards; don't Write on the 1st Page Backside</li> <li>Answer all Questions of Section A (Compulsory)</li> <li>Answer Any Four out of Six of Section B</li> <li>Answer Any Three out of Five of Section C</li> <li>Possession of Mobile Phones or any kind of <u>Written Material, Arguments with the Invigilator or Discussing with Co-Student</u> will come under <u>Unfair Means</u> and will <u>Result in the Cancellation of the Papers.</u></li> </ul>		
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 Q1-x) – 20 Marks					
Q. N1	QUESTIONS	Marks	COs	KL	PO
i	What operators does python support?	2	CO1	K1	PO1
ii	What is an Arithmetic operator?	2	CO2	K3	PO2
iii	What is function call?	2	CO3	K2	PO2
iv	What is Boolean value?	2	CO4	K2	PO1
v	What is chained conditional statement?	2	CO5	K2	PO5
vi	Write the syntax and usage of while loop	2	CO2	K1	PO1
vii	What are the building block of algorithm?	2	CO1	K4	PO1
viii	Define Flowchart	2	CO1	K1	PO1
ix	Define python	2	CO1	K5	PO3
x	What is python break statement?	2	CO3	K4	PO5

<b>Section B (Answer any FOUR out of SIX) - 20 Marks</b> (Each question Carry 5 Marks)						
Q. No.	QUESTIONS	Marks	COs	KL	PO	
2	What is python continue statement?	5	CO1	K2	PO4	
3	What are Python's dictionaries?	5	CO1	K2	PO3	
4	What are tuples in Python?	5	CO2	K4	PO2	
5	What is a variable?	5	CO3	K1	PO2	
6	What is module and package in Python?	5	CO2	K4	PO2	
7	What is meant by directory? How and where is it useful?	5	CO3	K3	PO3	
<b>Section C (Answer any THREE out of FIVE) - 30 Marks-</b> (Each question Carry 10 Marks)						
Q. No.	QUESTIONS	Marks	COs	KL	PO	
8	Differentiate Algorithm and Pseudo code	10	CO2	K2	PO1	
9	What is the difference between algorithm and flowchart	10	CO3	K3	PO5	
10	What is the advantage of using flowchart?	10	CO1	K3	PO3	
11	Explain function and module with suitable example	10	CO2	K4	PO4	
12	Explain the function arguments in python	10	CO5	K5	PO5	