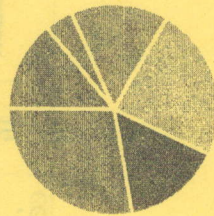


O- Course Outcomes, **KL- Knowledge Level, PO – Program Outcome**

CO1	Analyse the logic of a given problem
CO2	Use branching control statements and iterative control statements
CO3	Demonstrate the concepts of Reusability through the use of functions
CO4	Analyse the problem statement and decide the logic to solve the problem using C Programming

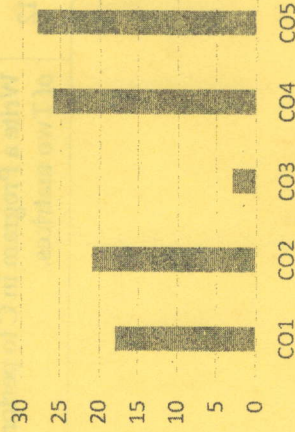
**GRAFICAL REPRESENTATION**

**Bloom's Level wise Marks Distribution**



■ K1 ■ K2 ■ K3 ■ K4 ■ K5 ■ K6

**Course Outcome Wise Marks Distribution**



**ARKAJAIN University**  
Jharkhand

**END TERM EXAMINATION**  
School of Engineering & IT

Branch	CS & IT	Program	BCA
Subject Name	Programming in C	Semester	1st
		Year	2023/Odd

- 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 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.

Time: 3 Hour  
Max. Marks : 70

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	C can be used on _____. a) Only MS-DOS operating system b) Only Linux operating system c) Only Windows operating system d) All the above	2	CO1	K1	PO2
ii	If a is an integer variable, a = 5 / 2; will return a value _____. a) 2.5                                    b) 3 c) 2                                        d) 0	2	CO1	K1	PO4
iii	A character variable can at a time store _____. a) 1 character                        b) 8 characters c) 254 characters                    d) None of the above	2	CO2	K1	PO1
iv	Which operator is used to find the reminder? a) &                                        b) % b) !                                        c) =	2	CO1	K2	PO2
v	The maximum value that an integer constant can have is _____. a) -32767                                b) 32767 c) 1.7014e+38                        d) -1.7014e+38	2	CO1	K1	PO6



Section C (Answer any THREE out of FIVE) - 30 Marks- (Each question Carry 10 Marks)					
Q. No.	QUESTIONS	Marks	COs	KL	PO
8	What are various loops available in C? Explain different types of loops with the help of programs.	10	CO2	K1	PO5
9	What is pointer? How is it different from a normal variable? Explain pointer with the help of program by swapping of two number using third variable.	10	CO1	K1	PO6
10	What is the Pre-processor Directive? Explain various pre-processor directive in C.	10	CO1 CO2	K2	PO2
11	What is a Function? State the difference between Call by value & call by Reference with the help of Program.	10	CO2	K1	PO5
12	Write a Program in C to perform the Multiplication of Two matrices.	10	CO1 CO2	K2	PO2

vi	The for loop contains _____ parts of the expression. a) 5 b) 3 c) 9 d) 7	2	CO1 CO2	K2	PO2
vii	Which is the only function all C program must contains? a) printf() c) main() b) scanf() d) None of the above	2	CO1 CO2	K4	PO3
viii	C programs are converted into machine language with the help of _____. a) An Editor c) An operating system b) A compiler d) None of the above	2	CO2	K1	PO5
ix	Directives are translated by the _____. a) Pre-processor c) Linker b) Compiler d) Editor	2	CO1	K1	PO6
x	How many times is a do while loop guaranteed to loop a) 0 c) 1 b) Infinitely d) Variable	2	CO1 CO2	K2	PO2

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

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	What do you understand by Decision Making Statement? Write down the syntax of if, if else, if-else-if ladder using program.	5	CO2	K1	PO1
3	What do you mean by Data type? Explain various data types used in C.	5	CO1	K2	PO2
4	Write down the differences between a. while loop & do-while loop b. Break and Continue	5	CO1	K1	PO6
5	What is an operator? Describe the several types of operators used in C. Explain in details.	5	CO1 CO2	K2	PO2
6	What is structure in c? Explain the concept of structure with the help of program.	5	CO1	K1	PO4
7	What are the various Storage Classes in C? Explain in brief.	5	CO2	K1	PO1



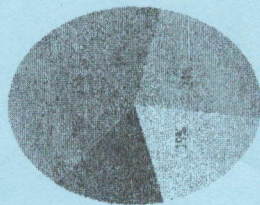
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CO- Course Outcomes, **KL-** Knowledge Level, **PO** – Program Outcome

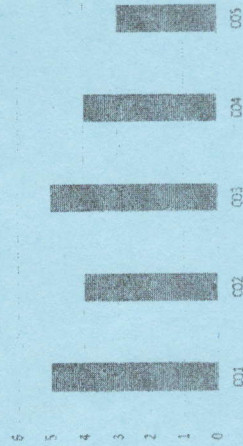
CO1	To build the students' confidence and to enhance competitiveness by projecting a strong personality.
CO2	Student shall be able to improve their listening & speaking abilities.
CO3	They will be able to work on their ability to write error free while improvising vocabulary & grammar.
CO4	Students will be able to deliver an effective oral business presentation.
CO5	They will be able to demonstrate his verbal and non-verbal communication ability through presentations.

**GRAFICAL REPRESENTATION**

Bloom's Level wise Marks Distribution



Course Outcome Wise Marks Distribution



**ARKAJAIN**  
University  
Jharkhand

**END TERM EXAMINATION**  
School of Engineering & IT

Branch	CS&IT	Program	BCA
Subject Name	Business communication	Semester	Ist
		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 <b>Unfair Means</b> and will <b>Result</b> in the <b>Cancellation of the Papers.</b></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-xx) – 20 Marks**

Q. N1	QUESTIONS	Marks	COs	KL	PO
i	Define Communication?	2	CO1	K1	PO2
ii	What are the characteristics of a good report?	2	CO3	K6	PO6
iii	List out the elements of the Communication System	2	CO1	K4	PO4
iv	Define Nonverbal Communication?	2	CO2	K5	PO1
v	What do you understand by unconscious body Language?	2	CO3	K3	PO2
vi	What is Paralanguage?	2	CO4	K2	PO3
vii	Discuss the purpose of resume.	2	CO5	K5	PO6
viii	What do you understand by minutes of meeting	2	CO1	K3	PO4
ix	Why listening is important?	2	CO4	K4	PO5
x	What are the benefits of upward communication	2	CO2	K1	PO6



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

(Each question Carry 5 Marks)

Q. No.	QUESTIONS	Marks	Cos	KL	PO
2	What are the different Process of Communication	5	CO1	K2	PO1
3	What are the Characteristics of a Good Report	5	CO4	K3	PO5
4	What are the different process of Listening?	5	CO3	K6	PO2
5	What are the Principles of Effective Communication	5	CO2	K5	PO4
6	Explain the Structure of a business Letter in brief?	5	CO5	K4	PO8
7	Write notes on: (i) Agenda (ii) Minutes of meeting (iii) Meeting	5	CO3	K2	PO7

**Section C (Answer any THREE out of FIVE) – 30 Marks-**

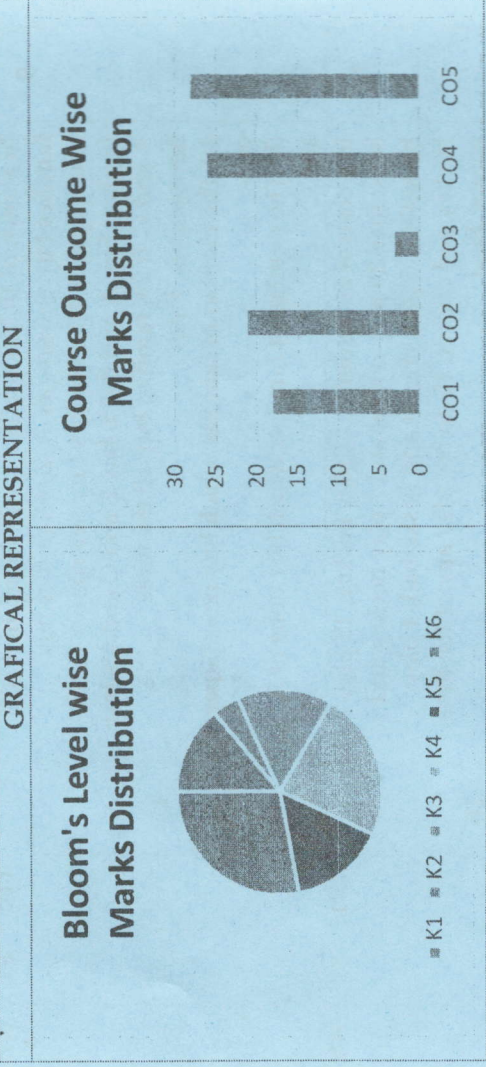
(Each question Carry 10 Marks)

Q.No.	QUESTIONS	Marks	Cos	KL	PO
8	Explain in Brief about the 7 C's of Communication	10	CO1	K1	PO6
9	"A good letter is one which is clear, brief, effective and should convey the right message." Explain this statement.	10	CO2	K3	PO2
10	Explain the following terms: (i) Appearance (ii) Facial expressions (iii) Eye contact (iv) Smile (v) Clothing and accessories	10	CO3	K4	PO1
11	Explain the Barriers of Effective Listening?	10	CO4	K3	PO3
12	What is a meeting? What are its objectives? What are the different types of meetings?	10	CO5	K6	PO4



12	(a) Let $f: R \rightarrow R: f(x) = 4x + 3$ for all $x \in R$ . Show that $f$ is invertible and find $f^{-1}$ . (b) Show that $f: R \rightarrow R$ defined as $f(a) = 3a^3 - 4$ is one to one function?	CO1	K3	PO7
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CO- Course Outcomes,		KL- Knowledge Level,	PO - Program Outcome
CO1	Construct mathematical arguments using logical connectives and quantifiers		
CO2	Verify the correctness of an argument using propositional and predicate logic and truth tables		
CO3	Construct proofs using direct proof, proof by contraposition, proof by contradiction, proof by cases, and mathematical induction		
CO4	Perform operations on discrete structures such as sets, relations and functions and be familiar with concepts like Groups and Rings		
CO5			



<b>ARKA JAIN University</b> Jharkhand		<b>END TERM EXAMINATION</b> School of Engineering & IT	
Branch	CS & IT	Program	BCA
Subject Name	Discrete Mathematics	Semester	1st
		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 <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>		
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. N1	QUESTIONS	Marks	COs KL
i	The members of the set $S = \{x \mid x \text{ is the square of an integer and } x < 100\}$ is _____ a) $\{0, 2, 4, 5, 9, 55, 46, 49, 99, 81\}$ b) $\{1, 4, 9, 16\}$ c) $\{0, 1, 4, 9, 16, 25, 36, 49, 64, 81\}$ d) $\{0, 1, 4, 9, 25, 36, 49, 123\}$	1	CO2 K4 PO6
ii	Which of the following function $f: Z \times Z \rightarrow Z$ is not onto? a) $f(a, b) = a + b$ b) $f(a, b) = a$ c) $f(a, b) =  b $ d) $f(a, b) = a - b$	1	CO1 K2 PO2
iii	Which option is the negation of the bits "1001011"? a) 11011011 b) 10110100 c) 01110100 d) 11001100	1	CO1 CO2 K4 PO3
iv	If $x$ is a set and the set contains an integer which is neither positive nor negative then the set $x$ is _____ a) Set is Empty b) Set is Non-empty c) Set is Finite. d) Set is both Non-empty and Finite.	1	CO1 K1 PO4
v	Given: Statement $x$ is logically equivalent to statement $y$ . Problem: Which of the following is true? a) $x$ if and only if $y$ b) $x$ biconditional $\neg y$ . c) $x$ if $y$	1	CO2 K1 PO1



i	How many injections are defined from set A to set B if set A has 4 elements and set B has 5 elements? a) 24 b) 64 c) 144 d) 120	1	CO1	K2	PO2
ii	Consider the binary relation, $A = \{(a,b) \mid b = a - 1 \text{ and } a, b \text{ belong to } \{1, 2, 3\}\}$ . The reflexive transitive closure of A is? a) $\{(a,b) \mid a >= b \text{ and } a, b \text{ belong to } \{1, 2, 3\}\}$ b) $\{(a,b) \mid a > b \text{ and } a, b \text{ belong to } \{1, 2, 3\}\}$ c) $\{(a,b) \mid a <= b \text{ and } a, b \text{ belong to } \{1, 2, 3\}\}$ d) $\{(a,b) \mid a = b \text{ and } a, b \text{ belong to } \{1, 2, 3\}\}$	1	CO3	K1	PO6
iii	Number of edges incident with the vertex V is called? a) $O(n)$ b) $O(\log n)$ c) $O(n \log n)$	1	CO3	K2	PO2
ix	The graph in which, there is a closed trail which includes every edge of the graph is known as?	1	CO4	K1	PO5
x	What will be the probability of getting odd numbers if a dice is thrown?	1	CO5	K2	PO7

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

(Each question Carry 5 Marks)

No.	QUESTIONS	Marks	COs	KL	PO
2	Check whether " $\leq$ " is Reflexive, Symmetric or Transitive?	5	CO1	K3	PO7
3	$f(x) = x+2$ and $g(x) = 2x+1$ , find $(f \circ g)(x)$ and $(g \circ f)(x)$	5	CO1	K1	PO5
4	A person has undertaken a mining job. The probabilities of completion of the job on time with and without rain are 0.42 and 0.90 respectively. If the probability that it will rain is 0.45, then determine the probability that the mining job will be completed on time.	5	CO5	K1	PO1 <sub>2</sub>
5	The relation $f$ is defined by $f(x) = \begin{cases} x^2, & 0 \leq x \leq 3 \\ 3x, & 3 \leq x \leq 10 \end{cases}$ The relation $g$ is defined by $g(x) = \begin{cases} x^2, & 0 \leq x \leq 2 \\ 3x, & 2 \leq x \leq 10 \end{cases}$ Show that $f$ is a function and $g$ is not a function.	5	CO1 CO2	K4	PO3

6	Let $A = \{1, 2, 3, 4\}$ , $B = \{1, 5, 9, 11, 15, 16\}$ and $f = \{(1, 5), (2, 9), (3, 1), (4, 5), (2, 11)\}$ . Are the following true? (i) $f$ is a relation from A to B (ii) $f$ is a function from A to B	5	CO2	K3	PO1 <sub>1</sub>
7	Justify your answer in each case. Let $U = \{1, 2, 3, 4, 5, 6\}$ , $A = \{2, 3\}$ and $B = \{3, 4, 5\}$ . Find $A', B', A \cap B', A \cup B$ and hence show that $(A \cup B)' = A' \cap B'$ .	5	CO1 CO2	K4	PO5

**Section C (Answer any THREE out of FIVE) - 30 Marks-**

(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
8	Two dice are rolled, find the probability that the sum is: a) Less than 13. b) Exactly 08. c) Greater than 04.	10	CO2	K3	PO7
9	In a town of 10,000 families it was found that 40% families buy newspaper A, 20% families buy newspaper B, 10% families buy newspaper C, 5% families buy A and B, 3% buy B and C and 4% buy A and C. If 2% families buy all the three newspapers. Find: (a) The number of families which buy newspaper A only. (b) The number of families which buy none of A, B and C	10	CO2	K1	PO1 <sub>0</sub>
10	In a class of 60 students, 23 play hockey, 15 play basketball, 20 play cricket and 7 play hockey and basketball, 5 play cricket and basketball, 4 play hockey and cricket, 15 do not play any of the three games. Find (a) How many play hockey, basketball and cricket (b) How many play hockey but not cricket (c) How many play hockey and cricket but not basketball	10	CO1	K1	PO2
11	A vessel contains 4 blue balls, 5 red balls and 11 white balls. If three balls are drawn from the vessel at random, what is the probability that the first ball is red, the second ball is blue, and the third ball is white?	10	CO1	K2	PO5