



# Invertis University, Bareilly

## PO Attainment

Faculty Name: Gurpreet Singh

Class/Sem: BCA CC/2

Academic Year: 2022-23

Course Name: Data Structure Using C

Course Code: BCAI-205

Program Name: BCA CC

### CO-PO MAPPING:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	3				3	2				
CO2	1	1			3					1	2	
CO3	1		1		3	2			2		1	
CO4	2			1		1	3				2	
CO5		1			2		1				1	2
CO6		3			1		1				3	1

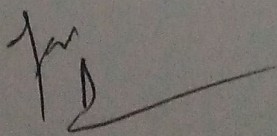
### CO ATTAINMENT:

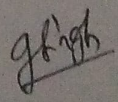
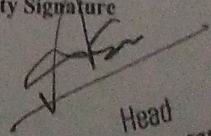
Gurpreet Singh	Att. Level
CO1	2.80
CO2	2.80
CO3	2.71
CO4	2.56
CO5	2.60
CO6	2.71

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### PO ATTAINMENT :

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Overall PO Attainment	2.7	2.7	2.8	2.6	2.7	2.7	2.7	2.8	2.7	2.8	2.7	2.6

  
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Even Semester Examination 2022-23  
 BCA (CLOUD COMPUTING)- II Semester  
 Course/Code: Data Structure Using C (BCAI-205)  
 Maximum Marks :50; Duration: 3 Hours

Q.No	Questions	Marks (50)	CO	BL
	<b>Explain the following:</b>			
1-I	What is Data Structure and how does it work ?	01	CO1	L2
1-II	Write down the difference between Graph and Tree?	01	CO2	L1
1-III	Describe the meaning of Primitive Data Structure?	01	CO2	L2
1-IV	Write name of the two Searching techniques ?	01	CO2	L1
1-V	Define term Binary tree ?	01	CO2	L1
	<b>Explain the following:</b>			
2-I	Write the name of the linear and nonlinear data structures.	01	CO1	L1
2-II	Describe term FIFO ?	01	CO1	L1
2-III	Write the name of the operations performed on Stack?	01	CO1	L1
2-IV	Define term Graph traversal ?	01	CO1	L2
2-V	Define Queue ?	01	CO1	L1
3-I	Answer any two: (a) Explain Insertion Sort with an example ? (b) Explain Tree Traversal (Inorder, Preorder and Postorder) with example. (c) Evaluate Postfix and Prefix expression of given expression using stack $2 + (3 * 1) - 9$	10	CO2	L2
4-I	Answer any two: (a) What is Data Structure and how does it work and also list the areas where data structures can be used ? (b) (1) What is an array in C programming language. Explain it with example. (2) What is Linked List. Explain it with example.	10	CO3	L5
5	Answer any two: (a) What is Quick sort and how does it work? Explain it with suitable example. (b) Construct unique binary tree using the given Inorder and Preorder sequence : Inorder : B,A,F,D,G,C,H,I,E Preorder : A,B,C,D,F,G,E,H,I c) Explain graph traversal with example ?	10	CO5	L4
6	Answer any two: (a) What is bubble sort and how does it work ? Explain with suitable example and also write the code. (b) Construct a max heap tree by inserting the following keys one after another in the given order : 5,10,25,13,12,26,30,32,15,27,35, 20,8,33,31 (c) (1) Construct all possible binary search tree by inserting following keys in any order : 2,13,75. (2) Explain Binary search tree with suitable example	10	CO6	L6

BL – Bloom's Taxonomy Levels

(1- Remembering, 2- Understanding, 3 – Applying, 4 – Analysing, 5 – Evaluating, 6 - Creating)  
 CO – Course Outcomes PO – Program Outcomes; PI Code – Performance Indicator Code

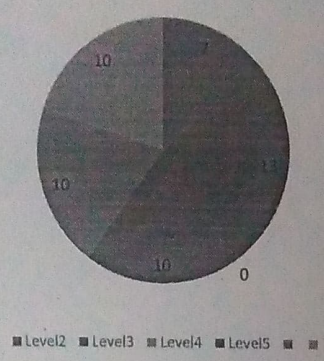
Level	Marks	CO	Marks
Level1	7	CO1	6
Level2	13	CO2	14
Level3	0	CO3	10
Level4	10	CO4	0
Level5	10	CO5	10
Level6	10	CO6	10
<b>Total</b>	<b>50</b>	<b>Total</b>	<b>50</b>

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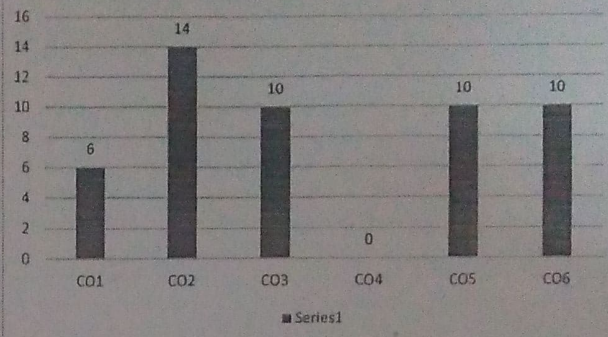
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Bloom's Level wise Marks Distribution



Course Outcome wise Marks Distribution



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**First Unit Test 2022-23**  
**BCA (CLOUD COMPUTING)- II Semester**  
**Course/Code: Data Structure Using C (BCAI-205)**

**Maximum Marks :30; Duration: 90 Minutes**

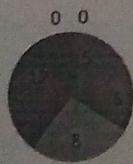
Q.No	Questions	Marks (30)	CO	BL
	<b>Explain the following in very short -</b>			
1-I	Explain graph with example?	01	CO1	L1
1-II	Write down the full form of DFS?	01	CO1	L1
1-III	Write down the name of the tree traversals?	01	CO2	L2
1-IV	Is graph is a linear data structure?	01	CO1	L2
1-V	Explain array?	01	CO1	L1
	<b>Explain the following term -</b>			
2-I	Write down the name of the data structure used in BFS?	01	CO2	L2
2-II	Write down the name of the data structure used in DFS?	01	CO2	L1
2-III	What is abstract data type?	01	CO2	L2
2-IV	What is data structure?	01	CO2	L2
2-V	Write down the name of the 5 data structures used in C ?	01	CO2	L1
	<b>Answer any two questions :</b>			
3	a) Construct unique binary tree using the given Inorder and Preorder sequence : Inorder : 1,2,3,4,5,7,8 Preorder : 5,2,1,4,3,8,7 b) Construct all possible binary search tree by inserting following keys in any order : 5,15,25 c) Explain binary search tree and complete binary tree with suitable example?	08	CO2	L3
4-A	Explain heap tree and it's type with suitable example? OR Explain binary tree and it's type with suitable example.	06	CO3	L4
4-B	Construct a max heap tree by inserting the following keys one after another in the given order : 15,25,13,12,26,9,16,30 32,15,27,35, 20,2,5 OR What is Data Structure and how does it work and also list the areas where data structures can be used?	06	CO3	L4

**BL – Bloom's Taxonomy Levels**

(1- Remembering, 2- Understanding, 3 – Applying, 4 – Analysing, 5 – Evaluating, 6 - Creating)  
 CO – Course Outcomes PO – Program Outcomes; PI Code – Performance Indicator Code

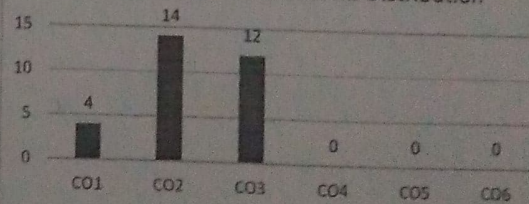
Level	Marks	CO	Marks
Level1	5	CO1	4
Level2	5	CO2	14
Level3	8	CO3	12
Level4	12	CO4	0
Level5	0	CO5	0
Level6	0	CO6	0
<b>Total</b>	<b>30</b>	<b>Total</b>	<b>30</b>

**Bloom's Level wise Marks Distribution**



■ Level1 ■ Level2 ■ Level3 ■ Level4 ■ Level5 ■ Level6

**Course Outcome wise Marks Distribution**

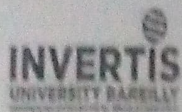


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Second Unit Test 2022-23

BCA (CLOUD COMPUTING)- II Semester

Course/Code: Data Structure Using C (BCAI-205)

Maximum Marks :30; Duration: 90 Minutes

Q.No	Questions	Marks (30)	CO	BL
	Explain the following in very short -			
1-I	Write name of the two Searching techniques ?	01	CO4	L1
1-II	Define Queue ?	01	CO4	L1
1-III	Write the name of any two operations performed on Stack?	01	CO4	L2
1-IV	Describe term LIFO ?	01	CO4	L1
1-V	Describe the meaning of Primitive Data Structure?	01	CO4	L1
	Explain the following function -			
2-I	Write the name of the linear data structures.	01	CO4	L2
2-II	Write down the name of the 4 applications of Stack?	01	CO5	L2
2-III	Write down the name of data types used in C language ?	01	CO5	L2
2-IV	What is data structure and why we used it?	01	CO5	L2
2-V	Write down the name of the 4 data structures used in C ?	01	CO5	L2
3	Answer any two: a) Explain binary search with suitable example. b) Construct the binary expression tree from the given postfix expression $5\ 3\ +\ 6\ * \ 4\ +$ c) Explain Quick sort with all the steps with suitable example?	08	CO5	L3
4-A	a) Explain stack permutations and also generate all possible stack permutations by pushing keys 1,2, 3 in the given order and pop off in any order. OR b) Explain Insertion Sort with an example ?	06	CO5	L3
4-B	a) Evaluate Postfix and Prefix expression of given expression using stack $2*3/(2-1)+5*(4-1)$ OR	06	CO6	L4

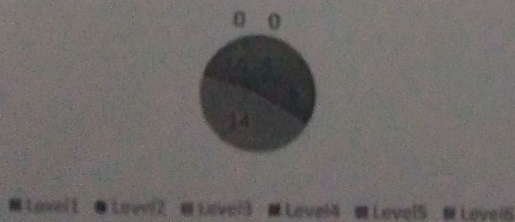
BL – Bloom's Taxonomy Levels

(1- Remembering, 2- Understanding, 3 – Applying, 4 – Analysing, 5 – Evaluating, 6 - Creating)

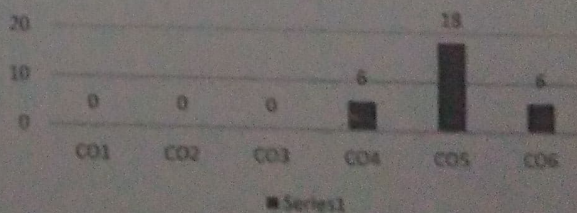
CO – Course Outcomes PO – Program Outcomes; PI Code – Performance Indicator Code

Level	Marks	CO	Marks
Level1	4	CO1	0
Level2	6	CO2	0
Level3	14	CO3	0
Level4	6	CO4	6
Level5	0	CO5	18
Level6	0	CO6	6
Total	30	Total	30

Bloom's Level wise Marks Distribution



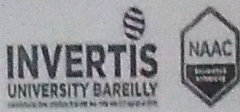
Course Outcome wise Marks Distribution



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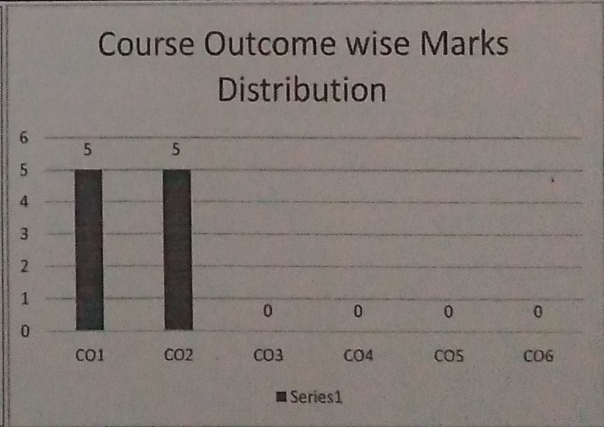
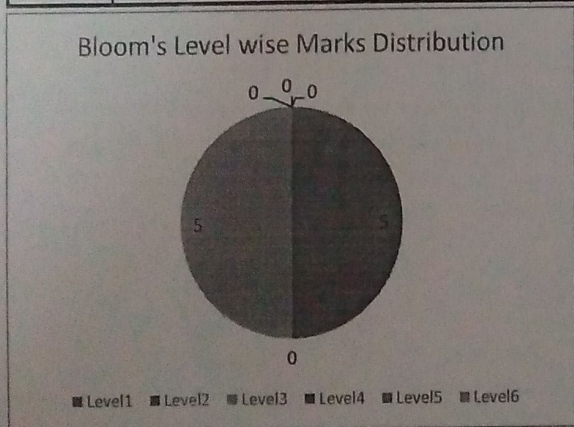


**First Class Test 2022-23**  
**BCA (CLOUD COMPUTING)- II Semester**  
**Course/Code: Data Structure Using C (BCAI-205)**  
**Maximum Marks :10; Duration: 30 Minutes**

Q.No	Questions	Marks (10)	CO	BL
1	Explain binary search with suitable example.	05	CO1	L3
2	Explain Insertion Sort with an example ?	05	CO2	L1

**BL – Bloom’s Taxonomy Levels**  
 (1- Remembering, 2- Understanding, 3 – Applying, 4 – Analysing, 5 – Evaluating, 6 - Creating)  
 CO – Course Outcomes PO – Program Outcomes; PI Code – Performance Indicator Code

Level	Marks	CO	Marks
Level1	5	CO1	5
Level2	0	CO2	5
Level3	5	CO3	0
Level4	0	CO4	0
Level5	0	CO5	0
Level6	0	CO6	0
<b>Total</b>	<b>10</b>	<b>Total</b>	<b>10</b>



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PROGRAM : BCA (CLOUD COMPUTING)  
SEMESTER : SECOND  
SESSION : 2022-23  
COLLEGE : Faculty of Computer Application

Enrollment No.	Roll No.	Student ID	Student Name	BCAI201				BCAI204				BCAI205				BCAI206				BCAI207				BCAI208				BCAI211				BCAI212				UOT1		
				Max Marks		CR	Max Marks		CR	Max Marks		CR	Max Marks		CR	Max Marks		CR	Max Marks		CR	Max Marks		CR	Max Marks		CR	Max Marks		CR	Max Marks							
				50	25	75	T	50	25	75	T	50	25	75	T	50	25	75	T	50	25	75	T	50	25	75	T	50	25	75	T	50	25	75	T	50	25	75
20277	221020011	BCCC2020014	SARISH SAXENA	22	12	41	3	31	19	50	3	24	19	43	3	21	19	40	3	28	11	39	3	19	7	27	3	28	20	48	3	28	18	46	3	51	22	73
20296	221020010	BCCC2020014	ABHAY PRATAP SINGH	38	21	59	3	29	20	49	3	40	21	61	3	34	23	57	3	29	12	41	3	18	9	27	3	45	26	71	3	28	17	45	3	51	28	79
20294	221020017	BCCC2020010	ALISHA SINGH	35	19	54	3	27	16	43	3	34	18	52	3	36	19	55	3	25	12	37	3	19	7	27	3	35	18	53	3	23	10	33	3	39	15	54
20274	221020014	BCCC2020011	ABHINAV SINGH	38	19	57	3	43	21	64	3	28	18	46	3	27	21	48	3	24	11	35	3	9	7	16	3	20	23	43	3	25	10	35	3	48	26	74
20278	221020019	BCCC2020010	ARIYAN SINGH	28	22	50	3	39	20	59	3	30	21	51	3	24	20	44	3	28	12	40	3	12	9	21	3	29	20	49	3	25	10	35	3	46	28	74
20280	221020020	BCCC2020008	AZAD SINGH	39	19	58	3	36	18	54	3	43	21	64	3	32	21	53	3	29	10	39	3	12	9	21	3	41	22	63	3	28	11	39	3	50	25	75
20284	221020021	BCCC2020008	CHANDRESH SINGH	38	16	54	3	29	19	48	3	34	19	53	3	23	21	44	3	26	10	36	3	11	9	20	3	39	20	59	3	28	12	40	3	50	27	77
20286	221020022	BCCC2020017	CHETAN GARG	34	22	56	3	34	22	56	3	41	23	64	3	22	22	44	3	30	13	43	3	11	8	19	3	41	23	64	3	36	11	47	3	50	29	77
20248	221020023	BCCC2020008	MADHAV SERRI	33	21	54	3	23	20	43	3	30	24	54	3	28	22	50	3	29	13	42	3	11	9	20	3	41	21	62	3	25	10	36	3	49	28	77
20275	221020024	BCCC2020006	NIGAM SATHOD	36	24	60	3	36	22	58	3	32	21	53	3	25	23	48	3	30	10	40	3	12	9	21	3	37	22	59	3	30	12	42	3	49	29	78
20272	221020025	BCCC2020004	PRAGYA PATHAK	45	22	67	3	32	20	52	3	40	22	62	3	40	24	64	3	27	15	39	3	11	8	19	3	41	22	63	3	25	11	37	3	51	28	79
20288	221020026	BCCC2020007	PRANAV SAXENA	38	19	57	3	35	19	54	3	38	19	57	3	24	10	34	3	28	11	39	3	10	7	17	3	26	10	36	3	33	10	43	3	45	12	57
20289	221020027	BCCC2020010	PRANAV NALANG	35	14	49	3	27	14	41	3	35	20	55	3	21	19	40	3	28	11	39	3	10	8	18	3	19	20	39	3	20	11	31	3	42	25	67
20249	221020028	BCCC2020001	SACHIN BRUNJI	31	19	50	3	21	15	36	3	20	17	37	3	20	19	39	3	26	12	38	3	10	8	18	3	12	16	31	3	27	10	37	3	46	25	71
20250	221020029	BCCC2020014	SACHIN SINGH	30	18	48	3	22	18	40	3	41	19	60	3	22	23	45	3	30	10	40	3	11	8	19	3	22	21	43	3	28	11	39	3	46	28	74
20209	221020030	BCCC2020002	SHUBHART GUPTA	37	23	60	3	34	21	55	3	42	20	62	3	36	23	59	3	26	12	38	3	11	8	19	3	29	20	49	3	25	10	36	3	46	28	74
20210	221020031	BCCC2020012	VENETA	31	19	50	3	25	22	47	3	25	21	46	3	26	20	46	3	25	11	36	3	9	7	16	3	27	22	49	3	21	10	31	3	43	28	71
20244	221020032	BCCC2020005	ANSHU SHrivastava	39	13	52	3	42	19	61	3	41	19	60	3	27	22	49	3	26	12	38	3	11	8	19	3	38	19	57	3	23	10	33	3	56	29	85
20248	221020032	BCCC2020019	ANJAN GANGWAR	AB	10		0	AB	10		0	AB	10		0	AB	10		0	AB	10		0	AB	10		0	AB	10		0	AB	10		0	AB	12	

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GPI of Re-Appeal Students are not Calculated.

Passing marks - 60% in each course

Legend:  
- Green: Scored Marks / Inverted Marks  
- Total Marks  
- 40: 40% Marks  
- Passed with Green Marks  
- Red: Failed

BCA201 - LINUX SHELL SCRIPTING  
BCA204 - ENVIRONMENTAL STUDIES

BCA204 - OPERATING SYSTEMS  
BCA207 - DATA STRUCTURES USING C LAB

BCA206 - DATA STRUCTURES USING C  
BCA208 - LINUX SHELL SCRIPTING LAB

PROGRAM : BCA (CLOUD COMPUTING)  
SEMESTER : SECOND  
SESSION : 2022-23  
COLLEGE : Faculty of Computer Application

Enrollment No.	Roll No.	Student ID	Student Name	HOTS		Grand Total	Credit Secured	SGPA	CPI	Remarks
				CR						
				4						
				G	CS					
222277	2210208015	BCCC2022018	AARUSH SAXENA	4		411	24	0.00	49.71	Pass
222280	2210208016	BCCC2022014	ABHAY PRATAP SINGH	4		472	24	0.00	57.12	Pass
222484	2210208017	BCCC2022010	ALISHA SINGH	4		394	24	0.00	47.67	Pass
222745	2210208018	BCCC2022011	ALJUN SINGH	4		414	24	0.00	50.75	Pass
222789	2210208019	BCCC2022013	ARYAN SINGH	4		426	24	0.00	51.5	Pass
222893	2210208020	BCCC2022008	AZAD SINGH	4		450	24	0.00	56.79	Pass
222904	2210208021	BCCC2022005	CHANDRESH SINGH	4		426	24	0.00	51.5	Pass
222925	2210208022	BCCC2022017	CHETAN GARG	4		462	24	0.00	56.12	Pass
222440	2210208023	BCCC2022003	MADHAV SEEKRI	4		441	24	0.00	53.42	Pass
222770	2210208024	BCCC2022006	NIGAM RATHOD	4		464	24	0.00	55.96	Pass
222878	2210208025	BCCC2022904	PRAGYA PATHAK	4		486	24	0.00	59.25	Pass
222986	2210208026	BCCC2022007	PRAKHAR SAXENA	4		323	21	0.00	38.42	Pass
223896	2210208027	BCCC2022015	PRANAV NAIKANG	4		381	24	0.00	45.83	Pass
224189	2210208028	BCCC2022001	SACHIN BHULJI	4		379	24	0.00	46.71	Pass
224225	2210208029	BCCC2022016	SAKSHAM SINGH	4		434	24	0.00	52.5	Pass
224409	2210208030	BCCC2022902	SIDDHANT GUPTA	4		451	24	0.00	54.83	Pass
224815	2210208031	BCCC2022012	VINEETA	4		404	24	0.00	49.25	Pass
224944	2210208033	BCCC2022020	ARCHIT SHRIVASTAVA	4		448	24	0.00	54.75	Pass
224948	2210208032	BCCC2022019	ARYAN GANGWAR	0		88	0	0.00	--	Re-Appear: BCAI202, BCAI204, BCAI205, BCAI206, BCAI207, BCAI208, BCAI211, BCAI212, HOTS

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CPI of Re-Appear Students are not Calculated.

Passing marks - 40% in each course

Grade

External Marks / Internal Marks

Total Marks

date : Jul 18, 2023

Passed with Grace Marks

L-Credit

BCAI202 : LINUX SHELL SCRIPTING  
BCAI206 : ENVIRONMENTAL STUDIES  
BCAI204 : OPERATING SYSTEMS

BCAI204 : OPERATING SYSTEMS  
BCAI207 : DATA STRUCTURES USING C LAB  
BCAI205 : DATA STRUCTURES USING C

BCAI205 : DATA STRUCTURES USING C  
BCAI206 : LINUX SHELL SCRIPTING LAB  
BCAI207 : DATA STRUCTURES USING C LAB