Class Test – I Session- Jan – June, 2020 Month-February

Sem-CSE 4th [A & B] Subject-Name-Operating System Subject-Code- 322456(22)

Time Allowed: 2 hrs Max Marks: 40

Levels of

Note: -	All Questions are computsory.
Q.N.	Questions

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Q.N.	Q	uestions		Marks	Bloom's taxonomy	COs
1.	Explain the purpose and discuss the calls related to management and communications.	to process mana	gement, device	[8]	Understanding	CO1
2.	Enumerate the different and explain with neat sk	operating syster		[8]	Understanding	CO1
3.	Discuss about the function respect to operating syst	onality of syster	n boot with	[8]	Understanding	CO1
4.	Show how Inter Proces in operating system	s Communicati	on takes place	[8]	Understanding	CO2
5.	What is Process Sched different types of Sched	luling? Discuss ulers in detail.	about all the	[8]	Understanding	CO2
	Demonstrate FCFS, SJF Round Robin(1 ms time Algorithm using below	, Priority(Non-F quantum) CPU table.	J scheduling			
6.	Process id					
-	P1 P2	6	1			
-	P3		2			
	P4	9	2	-		
	P5	· · · · · · · · · · · · · · · · · · ·	3			

SSIPMT

Shri Shankaracharya Institute of Professional Management & Technology Department of Computer Science & Engineering

Class Test - I Session- Jan - June, 2020 Month - February

Sem- CSE 4th (A/B) Subject- Computational Mathematics Code- 322451(14)
Time Allowed: 2 Hrs.

Max Marks: 40

D.	C	В.	Р		D.	C.	₽.	A		Q. N.
Find the solution using Gauss-Siedal method correct upto 3 places of decimals. $x+3y+10z=24$, $2x+17y+4z=35$, $28x+4y-z=32$.	Using Crout's method solve the equations $x+y+z=1$, $4x+3y-z=6$, $3x+5y+3z=4$	Apply Gauss Jordan's method to find the sloution for $10x + y + z = 12$, $2x + 10y + z = 13$, $x + y + 5z = 7$.	In solving simultaneous equations by gauss jordan and gauss elimination method the coefficient matrix are reduced to (a) and (b) matrices respectively.	Unit II	Apply Lin Bairstow's method and obtain solution for $x^4-x^3+6x^2+5x+10=0$, with $p_0=1.14$, $q_0=1.42$. Correct upto 3 places of decimals.	Apply Newton – Raphsons method, find a root of the equation $x \sin x + \cos x = 0$, which is near $x = \pi$ correct upto 6 places.	Applying Regula – Falsi method, find the smallest positive root of $x^2 - \log_e x - 12 = 0$, correct upto three decimal places.	Apply Bisection method and find value of $\sqrt[3]{10}$ correct upto 2 places of decimals.	Unit I	Q. N. Questions Questions
[6]	[6]	[6]	[2]	,	[6]	[6]	[6]	[2]		Marks
Applying	Applying	Applying	Remember, Understanding		Applying	Applying	Applying	Applying	The second secon	Levels of Bloom's taxonomy
CO2	CO2	CO2	C02		CO1	CO1	CO1	601		COs



Shri Shankaracharya Institute of Professional Management & Technology Department of Computer Science & Engineering

Class Test - I Session-Jan - June, 2020 Month - February

Sem-CSE 4th (A/B) Subject-Computational Mathematics Code-322451(14)

Max Marks: 40

Time Allowed: 2 Hrs.

Note: Aattempt All Question. D 0 B A A D 0 B Apply Bisection method and find value of $\sqrt[3]{10}$ correct upto 2 places of decimals. Apply Lin Bairstow's method and obtain solution for $x^4-x^3+6x^2+5x+10=0$, with $p_0=1.14$, $q_0=1.42$. Correct upto 3 places of decimals. Applying Regula – Falsi method, find the smallest positive root of $x^2 - \log_e x - 12 = 0$, correct upto three decimal places. Apply Newton – Raphsons method, find a root of the equation $x \sin x + \cos x = 0$, which is near $x = \pi$ correct upto 6 places. elimination method the coefficient matrix are reduced to (a) In solving simultaneous equations by gauss jordan and gauss Find the solution using Gauss-Siedal method correct upto 3 places of decimals. $x+3y+10z=24, \ 2x+17y+4z=35, \ 28x+4y-z=32$. x+y+z=1, 4x+3y-z=6, 3x+5y+3z=4Apply Gauss Jordan's method to find the sloution for 10x + y + z = 12, 2x + 10y + z = 13, x + y + 5z = 7. Using Crout's and (b) method solve the equations matrices respectively. Questions Unit II Marks [2] [6] [2] [6] [6] [6] [6] [6] Remember, Understanding taxonomy Levels of Bloom's Applying Applying Applying Applying Applying Applying Applying CO1 COs CO1 C02 CO1 01 02 C02 C02

Class Test – I Session- Jan – June, 2020 Date -17 Feb.

Sem-CSE 4th (A+B) Subject-Discrete Mathematics Code-322452(14)

Time Allowed: 2 hrs Max Marks: 40

Note: - All questions are compulsory.

Q.N.	Questions	Marks	Levels of Bloom's taxonomy	COs
	Unit I			
1.	Define Quantifiers and Write the following statement in symbolic form: "If either jerry takes calculus or ken takes sociology, then lorry will take English."	[2]	Apply	CO1
2.	Define logical equivalence and prove that $(p \to q) \land (r \to q) \Leftrightarrow (p \lor r) \to q$.	[6]	Apply	CO1
3.	Explain DNF and CNF. Express the Boolean function into DNF $f(x, y, z) = [(x + y') + (y + z')'] + yz$	[6]	Apply	CO1
4.	Draw the following network into simplified form:	[6]	Apply	CO1
	Unit II	i		I
1.	Define ordered pair and Cartesian product and if $A = \{a, b\}$, $B = \{2, 3\}$ and $C = \{3, 7\}$ then find $A \times (B \cap C)$.	[2]	Apply	CO2
2.	Define equivalence relation. If R be a relation $R=\{(x,y): x \in z, y \in z, x-y \text{ is an even integer}\}$ prove that R is an equivalence relation.	[6]	Apply	CO2
3.	Define lattice and prove that $(P(S),\subseteq)$ is a lattice, where $P(S)$ is power set of S .	[6]	Apply	CO2
4.	If $f: X \to Y$ and $g: Y \to Z$ be one-one onto mapping, then prove that the mapping $g \circ f: X \to Z$ is also one-one onto and $(g \circ f)^{-1} = f^{-1} \circ g^{-1}$.	[6]	Apply	CO2



Class Test - I Session- Jan - June, 2020 Month-February

Sem-CSE 4th [A] Subject-OOP using C++ Code-322455(22)

Time Allowed: 2 hrs Max Marks: 40

		·	,	y			
.7	6.	5.	4.		,	-	Note:
Explain in brief a. Local Class b. Empty Class c. Nested Class	Describe Static. Write a program to assign unique ID numbers to all the objects when member function setID() is called. Display the ID numbers when member function getID() is called. Display total number of objects created using static member function showTotal()	Define Friend class. Implement a program in C ++ to add the contents of an object of `A', `B' and 'C', implementing the concept of friend class.	Define Function Overloading, Explain Call by Address and Call by Reference with suitable example.	Define Constructor. Write a program to perform addition and subtraction of two complex number using Constructor Overloading.	Explain Friend function. The following main function should be able to swap the data member of objects ob1 and ob2. The data members should private. Construct a class with a complete program. Line No. C++ Code Line No. C++ Code 1. main() 7. ob2.fill(20); 2. { 8. swapAB (ob1,ob2); 3. clrscr(); 9. ob1.show(); 4. A ob1; 10. ob2.show(); 5. B ob2; 11. getch(); 6. ob1.fill (10); 12. }	Define Class and Object. Compare the Procedure-Oriented and Object-Oriented programming?	Note: - Attempt any 5 Question. All Carry 8 Marks. Q.N. Questions
®	8	8	8	[8]	<u>@</u>	[8]	Marks
Remember	Applying	Applying	Understanding	Create	Create	Remember	Levels of Bloom's taxonomy
Cop	CO2	CO2	CO1	CO3	CO ₂	CO1	COs



Shri Shankaracharya Institute of Professional Management & Technology

Department of Computer Science & Engineering

Class Test - I Session- Jan - June, 2020 Month-February

4th [A] Subject- OOP using C++ Code-322455(22)

Sem-CSE 4th [A] Subject- OOP using C++ Code-Time Allowed: 2 hrs Max Marks: 40

Note: - Attempt any 5 Question. All Carry 8 Marks.

Questions	Questions	Q.N. Questions	Questions Marks
n Friend function. The following main to the data member of objects ob1 and o private. Construct a class with a complete. O. C++ Code Line No. Comain() To ob2.fill Residual Security Securit	d function. The following main function shata member of objects ob1 and ob2. The dae. Construct a class with a complete progra C++ Code	I function. The following main ta member of objects ob1 and of ta member of objects with a compound of the compound of the construct a class with a compound of the compound o	In differentiation of the following main function should be able at a member of objects ob1 and ob2. The data members e. Construct a class with a complete program. C++ Code
Define Class and Object. Compare the Proced Object-Oriented programming? Explain Friend function. The following main to swap the data member of objects ob1 and o should private. Construct a class with a completion of the compared of the	Questions Object. Compare the Procedure-Orient rogramming? Inction. The following main function shember of objects ob1 and ob2. The danstruct a class with a complete progrational complete progratical complete prograti	Questions Define Class and Object. Compare the Procedure-Oriented and Object-Oriented programming? Explain Friend function. The following main function should be able to swap the data member of objects ob 1 and ob2. The data members should private. Construct a class with a complete program. Line No. C++ Code Line No. C++ Code 1. main() 7. ob2.fill(20); 8. swapAB (ob1,ob2);	edure-Oriented and in function should be able ob2. The data members plete program. C++ Code ill(20); AB (ob1,ob2);
Questions mpare the Proced ing? le following main i objects ob1 and o class with a compl Line No. (Line No. (S. ob2.fill 8. swapAl 9. ob1.shu 10. ob2.shu	Questions Operations Operations Description Operations Objects ob1 and ob2. The daclass with a complete progrations Line No. C++ Code	Questions Ompare the Procedure-Oriented and Ing? The following main function should be able objects ob1 and ob2. The data members class with a complete program. Line No. C++ Code Ob2.fill(20); S. swapAB (ob1,ob2); 9. ob1.show(); 10. ob2.show();	edure-Oriented and function should be able ob2. The data members plete program. C++ Code [III(20); AB (ob1,ob2); show();
ne Proced ing main ing main ob1 and o b2.fill swapAl ob2.sh	ne Procedure-Orient ing main function sl bbl and ob2. The da h a complete progra lo. C++ Code ob2.fill(20); swapAB (ob1,ob2 ob1.show(); ob2.show();	ne Procedure-Oriented and main function should be able bit and ob2. The data members h a complete program. lo. C++ Code ob2.fill(20); swapAB (ob1,ob2); ob1.show(); ob2.show();	edure-Oriented and function should be able ob2. The data members plete program. C++ Code Ill(20); AB (ob1,ob2); how(); how();
	ure-Orient unction st b2. The da ete progra (++ Code (+20); (20); (0b1,0b2)w();)w();	ure-Oriented and urction should be able b2. The data members ete program. (2++ Code (20); (3 (ob1,ob2); (bw()); (bw());	and lid be able members
and [8] lid be able members [8]		Levels Bloom taxonor Remem	
and lid be able members	Levels of Bloom's taxonomy Remember Create		

Class Test - I Session- Jan - June, 2020 Month- February Sem- CSE 4th [B] Subject- C++ Code- 322455(22)

Time Allowed: 2 hrs

Max Marks: 40

Note: - In Unit I att

	G.	F.	ŗ	D,	C.	В.	A Pro	3	Q.N.	Note:
	What is friend function? Explain with example and problem with friend function?	What is copy constructor? Explain constructor overloading with example?	What is data hiding? Explain with example how we access private data members.	Write a program to print details of 5 students and print the toppers name using array of objects.	Explain function overloading? Explain with example?	What is a static variable? Write a program that counts the number of objects created by the class.	a) Abstract class. b) Local Class. c) Visibility Mode. d) Constructor.	Unit I	Questions	Note: - In Unit I attempt any five questions from A to G.
	[8]	8	[8]	[8]	[8]	[8]	[8]		Marks	
	Applying	Applying	Applying	Applying	Understanding	Applying	Understanding		Levels of Bloom's taxonomy	
Commonwell of	CO2	CO3	CO1	C02	C02	C02	CO2		COs	



Shri Shankaracharya Institute of Professional Management & Technology Department of Computer Science & Engineering

Class Test - I Session- Jan - June, 2020 Month- February Sem- CSE 4th [B] Subject- C++ Code- 322455(22)

Time Allowed: 2 hrs

Max Marks: 40

Q.N. Note: - In Unit I attempt any five questions from A to G. G. Ħ D. 0 B. A What is friend function? Explain with example and problem with friend function? overloading with example? What is data hiding? Explain with example how we Write a program to print details of 5 students and print the toppers name using array of objects. Explain function overloading? Explain with example? d) Constructor. c) Visibility Mode. b) Local Class. V a) Abstract class. What is copy constructor? number of objects created by the class. What is a static variable? Write a program that counts the access private data members. Questions Explain constructor Unit I Marks [8] [8] [8] 8 [8] [8] [8] Understanding Understanding Levels of Bloom's Applying Applying Applying Applying taxonomy Applying C02 C02 C02 CO3 C02 C02 COs CO1

Shri Shankaracharya Institute of Professional Management & Technology

Department of Computer Science & Engineering

Class Test – I Session-Jan-June, 2020 Month-February

Sem- CSE 4th [A & B] Subject- Computer Systems Architecture Code- 322454(22)
Time Allowed: 2 hrs

Max Marks: 40

D.	C.	B.	A.		D.	C.	B.	Ą		Q.N.	Note:
Exlpain Von Neuman Architecture.	Explain Main Memory in Detail	Explain the Cache Direct Mapping.	Draw the Memory Hierarchy.	Unit II	An instruction is stored in at memory location 400. The address part of the instruction is stored at location 401. The address field of the instruction has value 500 in it. A processor register R contains the value 200 in it. Evaluate the Effective address for the following: 1) Direct Mode 2) Immediate Mode 3) Realtive Mode 4) Register Indirect Mode 5) Index Mode as R as Index Register.	Explain Hardwired and microprogrammed contro unit with block diagram.	Exlain all the Addressing modes with example.	Write Diffrence between Organization and Architecture.	Unit I	Questions	Note: - Question A is compulsory in both Unit and attempt any two from B, $C \& D$
[8]	8	[8]	4		[8]	[8]	[8]	[4]		Marks	B, C & 1
Understanding	Remebering	Understanding	Remebering	,	Applying	Understanding	Understanding	Understanding		Levels of Bloom's Taxonomy	9.
СОЗ	СОЗ	соз	СОЗ		CO1	C01	CO1	<u>C</u>		COs	

Shri Shankaracharya Institute of Professional Management & Technology

Department of Computer Science & Engineering

Class Test - I Session-Jan-June 2020 Month-February

Class Test – I Session-Jan-June, 2020 Month-February
Sem- CSE 4th [A & B] Subject- Computer Systems Architecture Code- 322454(22)
Time Allowed: 2 hrs

Max Marks: 40

СОЗ	Understanding	[8]	ExIpain Von Neuman Architecture.	D.
соз	Remebering	[8]	Explain Main Memory in Detail	Ç
соз	Understanding	[8]	Explain the Cache Direct Mapping.	В.
CO3	Remebering	[4]	Draw the Memory Hierarchy.	A.
			Unit II	
C01	Applying	8	An instruction is stored in at memory location 400. The address part of the instruction is stored at location 401. The address field of the instruction has value 500 in it. A processor register R contains the value 200 in it. Evaluate the Effective address for the following: 1) Direct Mode 2) Immediate Mode 3) Realtive Mode 4) Register Indirect Mode 5) Index Mode as R as Index Register.	D.
CO1	Understanding	[8]	Explain Hardwired and microprogrammed contro unit with block diagram.	C.
C01	Understanding	[8]	Exlain all the Addressing modes with example.	В.
C01	Understanding	[4]	Write Diffrence between Organization and Architecture.	A
			Unit I	
COs	Levels of Bloom's Taxonomy	Marks	V. Questions	Q.N.
	D.	1B, C&1	Note: - Question A is compulsory in both Unit and attempt any two from B, C & D.	Note:

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Shri Shankaracharya Institute of Professional Management & Technology Department of Computer Science & Engineering

Class Test – I Session- Jan – June, 2020 Month- February Sem- CSE 4th A& B Subject- Data Structure Code- 322453(22)

Time Allowed: 2 hrs

Max Marks: 40

IV.	Ħ	Ħ.	H		IV.		II.	Г		Q.N.
Write an algorithm to insert a node at the Beginning of the Linked list	Consider the 25×4 matrix array SCORE. Suppose Base (SCORE)=200 and there are w=4 words per memory cell. Let the programming language store two-dimensional array using row-major order. Find out the address of SCORE [12,3], SCORE[16,4] and SCORE[10,3].	Define polish notation. Convert the following infix expression using stack. ((A+B) *D)^(E-F)	Why Asymptotic notation is used? Describe Bigoh, Omega and Theta Notation.	Part II	Two dimensional arrays are also called a. tables arrays b. matrix arrays c. both of above d. none of above	Arrays are best data structures a. for relatively permanent collections of data b. for the size of the structure and the data in the structure are constantly changing c. for both of above situation d. for none of above situation	Which of the following case does not exist in complexity theory a. Best case b. Worst case c. Average case d. Null case	Which if the following is/are the levels of implementation of data structure a. Abstract level b. Application level c. Implementation level d. All of the above	Part I	Questions
[8]	[8]	[8]	8		[2]	[2]	2	[2]		Marks
Applying	Applying	Applying	Applying		Applying	Applying	Applying	Understanding		Levels of Bloom's taxonomy
CO1	C01	C02	CO1	iah	COI	C01	C01	CO1		Cog



Shri Shankaracharya Institute of Professional Management & Technology Department of Computer Science & Engineering

Class Test - I Session- Jan - June, 2020 Month- February Sem- CSE 4th [A& B] Subject- Data Structure Code-322453(22)

Time Allowed: 2 hrs

Max Marks: 40

Note: - Solve All the q	Q.N.		I. a. Abstract level c. Implementation level	Which of the f	II. theory a. Best case c. Average case	Arrays are hes	a. for relatively	C ()	b. are situ	b. are c. situ			
Note: - Solve All the questions from Part 1 and Part 2. Q.N. Ouestions	Questions Part I	Which if the following is/are the levels of implementation of data structure	el b. Application level ion level d. All of the above	Which of the following case does not exist in complexity	b. Worst case se d. Null case	et data etrinoturas	 a. for relatively permanent collections of data b. for the size of the structure and the data in the structure are constantly changing 	for both of above situation d. for none of above ation	situation Two dimensional arrays are also called a. tables arrays b. matrix arrays c. both of above d. none of above	above situation d. for none of above nal arrays are also called b. matrix arrays d. none of above Part II	c. tor both of above situation d. for none of above situation Two dimensional arrays are also called a. tables arrays b. matrix arrays c. both of above d. none of above Part II Why Asymptotic notation is used? Describe Bigoh, Omega and Theta Notation.	situation Two dimensional arrays are also called a. tables arrays c. both of above dimensional arrays are also called a. tables arrays c. both of above Part II Why Asymptotic notation is used? Describe Bigoh, Omega and Theta Notation. Define polish notation. Convert the following infix expression to postfix expression using stack. ((A+B)*D)^(E-F)	situation Two dimensional arrays are also called a. tables arrays c. both of above A none of above Bigoh, Omega and Theta Notation. Define polish notation. Convert the following infix expression to postfix expression using stack. ((A+B) *D)^(E-F) Consider the 25×4 matrix array SCORE. Suppose Base (SCORE)=200 and there are w=4 words per memory cell. Let the programming language store two-dimensional array using row-major order. Find out the address of SCORE [12,3], SCORE[16,4] and SCORE[10,3].
Mark	Marks		[2]		[2]		[2]		[2]	[2]	[2]	[2]	[8]
Levels of	Bloom's taxonomy		Understanding		Applying		Applying		Applying	Applying	Applying Applying	Applying Applying Applying	Applying Applying Applying Applying
3	COs		CO1		<u>CO</u>		601		8	6	COI	CO2 CO1	CO1 CO2 CO3