Shri Shankaracharya Institute of Professional Management & Technology
Department of Information Technology
Class Test – I Session- Jan – June, 2020 Month-Feb
Sem- IT 4ᵗʰ
Subject- Telecom Switching and Computer Network
Code-333653(33)

Time Allowed: 2 hrs   Max Marks: 40

Note: - All questions are compulsory.

Q.N.	Questions	Marks	Levels of Bloom's taxonomy	COs
	PART I			
A.	Define network topology and types of network topologies?	[7]	Understanding	CO1,CO2
B.	Explain different type of cables used in computer network with diagram.	[7]	Understanding	CO1
C.	Describe TCP/IP Model in detail.	[6]	Understanding	CO2
	PART II			
A.	Differentiate between circuit switching and packet switching?	[7]	Understanding	CO1
B.	Explain OSI Model.	[7]	Understanding	CO1,CO2, CO3
C.	Write short notes on: a) DSL b) DTE-DCE	[6]	Understanding	CO2

All the best

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

Sem- IT 4ᵗʰ, Subject- Computer Organization and Architecture, Code- 333456(33)

Time Allowed: 2 hrs   Max Marks: 40

Note: - In Unit I , Question A is compulsory and attempt any two from B, C & D. Unit II is compulsory.

Q.N.	Questions	Marks	Levels of Bloom's taxonomy	COs
	Unit I			
A.	Can you diffrenciate computer organization and computer architecture.	[3]	Understanding	CO1
B.	Illustrate interrupt cycle.	[8]	Understanding	CO1
C.	Explicate common bus system. Also explain in brief various types of registers.	[8]	Understanding	CO1
D.	Describe various types of memory reference instructions.	[8]	Understanding	CO1
	Unit II			
A.	Can you diffrenciate fixed point arithmetic and floating point arithmetic?	[3]	Understanding	CO2
B.	Perform the operation: $(10) \times (10) = 100$ With Booth algorithm with signed magnitudes. Also, show the hardware implementation and hardware algorithm.	[10]	Applying	CO2
C.	Illustrate the division for fixed number with algorithm and appropriate example.	[8]	Understanding	CO2

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

Sem-4th   Subject-Computational mathematics   Code-333451(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.	Write formula for secant method.	[2]	Remember	CO1
2.	Find a real root correct up to 3 places of decimals for the equation $xe^x = \cos x$, by Regula-falsi method.	[6]	Applying	CO1
3.	Apply Newton Raphson's method to determine a root of equation $\cos x - 3x - 1 = 0$ correct up to 4 places of decimals.	[6]	Applying	CO1
4.	Apply Birge-Vieta method to find root correct up to 3 places of decimals for the equation $x^6 - x^4 - x^3 - 1 = 0$. Initial value for root is 1.5.	[6]	Applying	CO1
	Unit II			
1.	Apply Gauss Jordan's method to find the solution for $10x + y + z = 12$, $2x + 10y + z = 13$, $x + y + 5z = 7$.	[2]	Applying	CO2
2.	Using Crout's method solves the equations $x + 5y + z = 14, 2x + y + 3z = 13, 3x + y + 4z = 17.$,	[6]	Applying	CO2
3.	Find the solution of system of linear equation using Gauss-Siedal method correct up to 3 places of decimals. $6x + 15y + 2z = 72, x + y + 54z = 110, 27x + 6y - z = 85.$	[6]	Applying	CO2
4.	Solve the system of equations by relaxation method: $10x - 2y - 2z = 6, -x + 10y - 2z = 7, -x - y + 10z = 8.$,	[6]	Applying	CO2

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

Sem- IT 4th   **Subject- OOP using C++   Code- 333455(33)**

Time Allowed: 2 hrs   Max Marks: 40

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

Q.N.	Questions	Marks	Levels of Bloom's taxonomy	COs
1.	Define Function Overloading. Explain Call by Address and Call by Reference and Call by Value with suitable example.	[8]	Remember	CO1
2.	Explain in brief a. Local Class b. Empty Class c. Nested Class	[8]	Create	CO2
3.	Define Copy Constructor. Write a program to perform addition and subtraction of two complex number using Constructor Overloading.	[8]	Create	CO3
4.	Define Class and Object. Compare the Procedure-Oriented and Object-Oriented programming?	[8]	Understanding	CO1
5.	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.	[8]	Applying	CO2
6.	Describe Static. Write an OOP using C++ to count how many times a particular member function of a class is called by: (a) A particular object, (b) Any objects	[8]	Applying	CO2
7.	Explain Friend function. Write an object oriented program (OOP) using C++ to exchange the private data members of two different class using friend functions.	[8]	Remember	CO2

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

Sem- IT 4th   Subject- OOP using C++   Code- 33455(33)

Time Allowed: 2 hrs   Max Marks: 40

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

Q.N.	Questions	Marks	Levels of Bloom's taxonomy	COs
1.	Define Class and Object. Compare the Procedure-Oriented and Object-Oriented programming?	[8]	Remember	CO1
2.	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. }	[8]	Create	CO2
3.	Define Constructor. Write a program to perform addition and subtraction of two complex number using Constructor Overloading.	[8]	Create	CO3
4.	Define Function Overloading. Explain Call by Address and Call by Reference with suitable example.	[8]	Understanding	CO1
5.	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.	[8]	Applying	CO2
6.	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( )	[8]	Applying	CO2
7.	Explain in brief a. Local Class b. Empty Class c. Nested Class	[8]	Remember	CO2

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Class Test – I   Session- Jan – June, 2020 Month- February
Sem- IT 4th Subject- Data Structures And Algorithm Analysis Code- 333453(22)
Time Allowed: 2 hrs   Max Marks: 40

Note: - In Unit I all question is compulsory and attempt any six from A to G.

Q.N.	Questions	Marks	Levels of Bloom's taxonomy	COs
	Unit I			
A.	What is algorithm & its features?	[2]	Understanding	CO1
B.	What is data structure? What are different types of data structures?	[2]	Understanding	CO1
	Unit II			
A.	What is stack? Convert the infix to Postfix using stack. $(A+(B*C-(D/E^\wedge F)*G)*H)$	[6]	Applying	CO2
B.	Explain binary search algorithm? Calculate its time complexity.	[6]	Applying	CO3
C.	What is a sparse matrix? Write an algorithm to check if a given matrix is sparse or not.	[6]	Applying	CO1
D.	Write what are the differences between array and linked list.	[6]	Understanding	CO2
E.	What are Asymptotic notations and what they represent? Explain with example.	[6]	Understanding	CO1
F.	What is Queue? Explain briefly about deletion of an element from a Queue?	[6]	Applying	CO2
G.	Explain master method with it's criteria? Apply master method to solve $T(n) = 8\ T(n/2) + n^\wedge 2$	[6]	Applying	CO1