

ISLAMIAH COLLEGE [AUTONOMOUS], VANIYAMBADI

END SEMESTER EXAMINATIONS, NOVEMBER- 2016

Time: 3 Hrs

Max. Marks : 75

Subject: Object Oriented Programming with C++

Sub. Code : U3CS3001 / U3BC3001 / U3SW3001

PART – A (10 x 2 = 20)

Answer ALL Questions

1. Define data hiding.
2. What are Tokens?
3. What is an Object?
4. Define Constructor.
5. List out types of Inheritance.
6. What is virtual function?
7. What is a file?
8. How do you detect end-of-file in C++?
9. What is Template?
10. Define Exception.

PART – B (5 x 5 = 25)

Answer ALL Questions

18. Explain the concept of Operator Overloading with suitable illustration.
19. Explain how will you work with file in C++.
20. Explain "Exception Handling" mechanism with in C++

11. (a) State the advantage of Object Oriented Programming

(OR)

- (b) Explain Switch statement with syntax and example.

- 12.(a) Explain about passing parameters to the function with example.

(OR)

- (b) Give brief notes on Constructors and Destructors with example.

- 13.(a) Explain any two types of Inheritance.

(OR)

- (b) Explain the concept of Polymorphism.

- 14.(a) Describe the use of File Pointers

(OR)

- (b) Write notes on console I/O Operations.

- 15.(a) Explain Class templates with suitable example.

(OR)

- (b) Write short notes on String Manipulation in C++.

PART – C (10 x 3 = 30)

Answer any THREE Questions

16. Explain the Control Structures with syntax and examples.
17. Explain the concept of Class and Objects with suitable example program.

ISLAMIAH COLLEGE [AUTONOMOUS], VANIYAMBADI

END SEMESTER EXAMINATIONS, NOVEMBER 2016

Time : 3 Hrs

Max Marks : 75

Subject: C++ & Data Structures

Sub. Code: U5CC3001

PART – A (10 X 2 = 20 MARKS)

Answer ALL Questions

1. What is token?
2. What is class?
3. What is Inheritance?
4. What is template?
5. What is array?
6. What is stack?
7. What is recursion?
8. What is function?
9. What is sorting?
10. What is searching?

PART – B (5 X 5 = 25 MARKS)

Answer ALL Questions

11. (a) Describe the control structures in C++?
(Or)
(b) What are the functions in C++?
12. (a) Explain operator overloading?
(Or)
(b) Explain about exception handling?

13. (a) Explain about the conversion of infix to postfix operations?
(Or)
(b) Explain doubly linked lists?

14. (a) Explain recursion?
(Or)
(b) Explain BFS?

15. (a) Explain sorting?
(Or)
(b) Explain searching?

PART – C (3 X 10 = 30 MARKS)

Answer any THREE Questions

16. Discuss the principles of OOP's?
 17. Explain virtual functions and polymorphism?
 18. What are the different views of data?
 19. Explain dijkstra's algorithm?
 20. Explain about hashing?
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ISLAMIAH COLLEGE [AUTONOMOUS], VANIYAMBADI

END SEMESTER EXAMINATIONS, NOVEMBER- 2016

Time: 3 Hrs

Max. Marks : 75

Subject: Object Oriented Programming with C++

Sub. Code : U3BC3001

PART – A (10 x 2 = 20 Marks)

Answer ALL the Questions

1. What is expression?
2. List out the types of Operators in C++
3. What is Class?
4. How do you invoke Destructor?
5. Mention any two operators which cannot be overloaded.
6. Define Polymorphism.
7. What is the use of file pointer?
8. How will you open a file in C++?
9. List down the types of templates.
10. Name any two string functions used in C++.

PART – B (5 x 5 = 25 Marks)

Answer ALL the Questions

11. (a) Write notes on Expressions in C++

(Or)

- (b) Explain While and do While statements

- 12.(a) Discuss about the function retypes.

(Or)

- (b) What is constructor? List the various types of constructors. Write a sample program to implement the constructor.

- 13.(a) Explain Operator Overloading with suitable illustration

(Or)

- (b) Write short notes on virtual function.

- 14.(a) Describe various classes available for the file operations.

(Or)

- (b) Give notes on Pointers and also write a program to illustrate the uses of pointers.

- 15.(a) Explain about the templates and its types.

(Or)

- (b) Write the syntax for try, catch and finally block with examples.

PART – C (10 x 3 = 30 Marks)

Answer any THREE Questions

16. Explain the following with syntax and example:

- (a) if .. else statement

- (b) Nested if statement

- (c) switch statement

17. a) Write a Program in C++ to implement Class and object.

- b) Write the syntax and example for Destructor.

18. List down the various types of Inheritance. Explain any two types of Inheritance with suitable examples.

19. What is a file mode? Describe the various file mode options available.

20. Explain how the strings are manipulated in C++

ISLAMIAH COLLEGE [AUTONOMOUS], VANIYAMBADI
END SEMESTER EXAMINATIONS, NOVEMBER- 2016

Time: 3 Hrs

Max. Marks : 75

Subject: Object Oriented Programming with C++

Sub. Code : U3CS3001 / U3BC3001 / U3SW3001

PART – A (10 x 2 = 20)

Answer ALL Questions

1. Define data hiding.
2. What are Tokens?
3. What is an Object?
4. Define Constructor.
5. List out types of Inheritance.
6. What is virtual function?
7. What is a file?
8. How do you detect end-of-file in C++?
9. What is Template?
10. Define Exception.

PART – B (5 x 5 = 25)

Answer ALL Questions

11. (a) State the advantage of Object Oriented Programming

(OR)

- (b) Explain Switch statement with syntax and example.

- 12.(a) Explain about passing parameters to the function with example.

(OR)

- (b) Give brief notes on Constructors and Destructors with example.

- 13.(a) Explain any two types of Inheritance.

(OR)

- (b) Explain the concept of Polymorphism.

- 14.(a) Describe the use of File Pointers

(OR)

- (b) Write notes on console I/O Operations.

- 15.(a) Explain Class templates with suitable example.

(OR)

- (b) Write short notes on String Manipulation in C++.

PART – C (10 x 3 = 30)

Answer any THREE Questions

16. Explain the Control Structures with syntax and examples.

17. Explain the concept of Class and Objects with suitable example program.

18. Explain the concept of Operator Overloading with suitable illustration.

19. Explain how will you work with file in C++.

20. Explain "Exception Handling " mechanism with in C++

ISLAMIAH COLLEGE [AUTONOMOUS], VANIAMBADI

END SEMESTER EXAMINATIONS, NOVEMBER 2016

Time : 3 Hrs

Max Marks : 75

Subject: C++ & Data Structures

Sub. Code: USCC3001

PART – A (10 X 2 = 20 MARKS)

Answer ALL Questions

1. What is token?
2. What is class?
3. What is Inheritance?
4. What is template?
5. What is array?
6. What is stack?
7. What is recursion?
8. What is function?
9. What is sorting?
10. What is searching?

PART – B (5 X 5 = 25 MARKS)

Answer ALL Questions

11. (a) Describe the control structures in C++?
(Or)
(b) What are the functions in C++?
12. (a) Explain operator overloading?
(Or)
(b) Explain about exception handling?

13. (a) Explain about the conversion of infix to postfix operations?
(Or)
(b) Explain doubly linked lists?

14. (a) Explain recursion?
(Or)
(b) Explain BFS?

15. (a) Explain sorting?
(Or)
(b) Explain searching?

PART – C (3 X 10 = 30 MARKS)

Answer any THREE Questions

16. Discuss the principles of OOP's?
 17. Explain virtual functions and polymorphism?
 18. What are the different views of data?
 19. Explain dijksta's algorithm?
 20. Explain about hashing?
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ISLAMIAH COLLEGE [AUTONOMOUS], VANIYAMBADI
END SEMESTER EXAMINATIONS, NOVEMBER- 2016

Time: 3 Hrs

Max. Marks : 75

Subject: Object Oriented Programming with C++

Sub. Code : U3BC3001

PART – A (10 x 2 = 20 Marks)

Answer ALL the Questions

1. What is expression?
2. List out the types of Operators in C++
3. What is Class?
4. How do you invoke Destructor?
5. Mention any two operators which cannot be overloaded.
6. Define Polymorphism.
7. What is the use of file pointer?
8. How will you open a file in C++?
9. List down the types of templates.
10. Name any two string functions used in C++.

PART – B (5 x 5 = 25 Marks)

Answer ALL the Questions

11. (a) Write notes on Expressions in C++

(Or)

- (b) Explain While and do While statements

- 12.(a) Discuss about the function retypes.

(Or)

- (b) What is constructor? List the various types of constructors. Write a sample program to implement the constructor.

- 13.(a) Explain Operator Overloading with suitable illustration

(Or)

- (b) Write short notes on virtual function.

- 14.(a) Describe various classes available for the file operations.

(Or)

- (b) Give notes on Pointers and also write a program to illustrate the uses of pointers.

- 15.(a) Explain about the templates and its types.

(Or)

- (b) Write the syntax for try, catch and finally block with examples.

PART – C (10 x 3 = 30 Marks)

Answer any THREE Questions

16. Explain the following with syntax and example:

- (a) if .. else statement

- (b) Nested if statement

- (c) switch statement

17. a) Write a Program in C++ to implement Class and object.

- b) Write the syntax and example for Destructor.

18. List down the various types of Inheritance. Explain any two types of Inheritance with suitable examples.

19. What is a file mode? Describe the various file mode options available.

20. Explain how the strings are manipulated in C++



ISLAMIAH COLLEGE [AUTONOMOUS], VANTYAMBADI		
END SEMESTER EXAMINATIONS		
U3BC3001/U3CS3001/U3SW3001		APRIL/MAY-2017
OBJECT ORIENTED PROGRAMMING WITH C++		
Time: 3 Hrs		Max.Marks:75

PART - A (10 X 2 = 20)
Answer ALL the Questions

1. What are the benefits of OOPS?
2. Give any four applications of OOP
3. Define default arguments?
4. What is returning object?
5. What is an abstract class?
6. How will you overload unary and binary operator using friend function?
7. What are the two methods available for opening the files?
8. What is detecting end-of-file?
9. Define non- type template arguments
10. Define swapping

PART - B (5 X 5 = 25)
Answer ALL the Questions

11. (a) What are Tokens? Discuss about Tokens with suitable examples.
(OR)
(b) Write about Data abstractions.

12. (a) What are Member functions? List the characteristics of them.
(OR)
(b) Write short notes on static data members.
13. (a) Explain the multiple Inheritance with examples.
(OR)
(b) Explain the this pointer with example.
14. (a) Explain error handling functions during file operations with examples.
(OR)
(b) Explain the classes for file stream operations.
15. (a) Explain the function templates with multiple parameters.
(OR)
(b) Explain Random Access of Files.

PART - C (3 X 10 = 30)
Answer any THREE Questions

16. Describe the various control structures in C++.
17. Explain constructors and destructors with example.
18. What is meant by virtual function? Explain pure virtual function with example.
19. Explain the formatted console I/O operations.
20. Write about the exception handling mechanism in C++.

ISLAMIAH COLLEGE (AUTONOMOUS), VANIYAMBADI		
END SEMESTER EXAMINATIONS		
UOBC3001/UOCS3001/UOSW300	APRIL/MAY-2017	
1		
OBJECT ORIENTED PROGRAMMING IN C++		
Time: 3 Hrs		Max.Marks: 75

PART - A (10 X 2 = 20)
Answer ALL the Questions

1. Define abstract data type.
2. What is tokens and give some examples?
3. Define pointer.
4. Define references.
5. Define function overloading.
6. Write note on scope resolution operator.
7. Define inheritance and types.
8. What do you mean by destructor and mention its uses.
9. Define string. List the operations of strings.
10. What is error handling in C++?

PART - B (5 X 5 = 25)
Answer ALL the Questions

11. (a) Briefly explain programming paradigms.
(OR)
(b) Explain branching statements used in C++.
12. (a) Briefly explain inheritance with an example.
(OR)
(b) Explain Constructors and their types.

13. (a) Write a program to perform the overloading of a plus operator for finding the sum of the two given class objects.
(OR)
(b) Explain Function Overloading with an example.
14. (a) Briefly explain pure virtual functions.
(OR)
(b) Briefly explain class hierarchy.
15. (a) Briefly explain file stream.
(OR)
(b) Explain the file modes used in C++.

PART - C (3 X 10 = 30)
Answer any THREE Questions

16. Explain in detail about the OOP's concepts in C++.
17. Explain Friend function with example.
18. Write a program to implement the concept of bubble sort using template function.
19. Explain Operator overloading with an example.
20. Explain in detail error handling during file operations.

ISLAMIAH COLLEGE (AUTONOMOUS), VANIYAMBADI

END SEMESTER EXAMINATIONS APRIL / MAY 2017

Time: 3 Hrs

Max Marks: 75

Subject: C++ & Data Structures

Sub. Code: U5CC3001

PART A (10 X 2 = 20)

Answer ALL the Questions

1. Define Object.
2. What is mean by a destructor?
3. What is mean by Operator Overloading?
4. Mention any two string handling functions.
5. Define Stack.
6. Define Arrays
7. What is mean by Recursion?
8. Define Graph.
9. Mention any 4 types of Sorting Methods.
10. Define Hashing.

PART B (5 X 5 = 25)

Answer ALL the Questions

11. a. Explain with example classes and objects.
(OR)
b. Write short note on Constructors.
12. a. Write short note on Operator Overloading
(OR)
b. Explain briefly Exception Handling in C++.

13. a. Explain in detail infix to postfix expression using stack.
(OR)
b. Write an algorithm to implement Stack using array.

14. a. Write an algorithm to implement Recursion.
(OR)
b. Write an algorithm to implement Breath first Search

15. a. Write an algorithm to implement Bubble Sort.
(OR)
b. Write Short note on Hashing.

PART C (3 X 10 = 30)

Answer any THREE Questions

16. Explain in detail the objectives of OOPS concept.
17. Explain with example various types of inheritance.
18. Write an algorithm to implement Doubly Linked list and its operations.
19. Write an algorithm to implement Dijkstras Shortest Path algorithm.
20. Explain in detail any two Searching Algorithms.



**ISLAMIAH COLLEGE [AUTONOMOUS] VANIYAMBADI
ARREAR EXAMINATIONS, SEPTEMBER - 2018**

Time: 3 Hrs

Max. Marks: 75

Subject: Object Oriented Programming With C++

Sub. Code: U3CS3001/U3BC3001

PART – A (10 X 2 = 20)

Answer ALL Questions

1. What are the benefits of OOPS?
2. What is type cast operator?
3. Define default arguments?
4. Define static data members
5. What is an abstract class?
6. Define 'this' pointer.
7. What are the two methods available for opening the files?
8. What is the need for streams?
9. Define non- type template arguments
10. What are the ways that a string object can be created?

PART – B (5 X 5 =25)

Answer ALL Questions

11. a. What are Tokens? Discuss about Tokens with suitable examples.
Or
b. Discuss about applications of OOP.
12. a. What are Member functions? List the characteristics of them.
Or
b. Write a C++ program to illustrate copy constructor.
13. a. Explain the multiple Inheritance with examples.

Or

- b. Write a C++ program to illustrate the use of overloading binary operators.
14. a. Explain error handling functions during file operations with examples.
Or
b. Write short notes on c++ stream Classes.
15. a. Explain the function templates with multiple parameters.
Or
b. Explain relational operation in manipulating strings.

PART – C (3 X 10 = 30)

Answer any THREE Questions

16. Describe the various control structures in C++.
17. Discuss the function overloading with an example program.
18. What is meant by virtual function? Explain pure virtual function with example.
19. Explain file pointers and their manipulations with examples.
20. Write about the exception handling mechanism in C++.

19. Explain the working of a master-slave JK flip-flop.
20. Bring out the differences between
- (i) SRAM and DRAM (ii) ROM and RAM

ISLAMIAH COLLEGE [AUTONOMOUS] - VANIYAMBADI
ARREAR EXAMINATIONS – SEPTEMBER - 2018
USCC3001: C++ & DATA STRUCTURES

TIME: 3 Hrs MAX. 75 Marks
 II B.Sc (CS,SW) /II B.C.A Semester III

PART-A (10 X 2 = 20 MARKS)
Answer ALL Questions

1. Define abstraction?
2. Distinguish between Objects and classes
3. What is a virtual base class?
4. Write the syntax of *set()* function.
5. What is meant by the terms 'row-major order' and 'column-major order'?
6. Define dynamic data structures with an example.
7. Differentiate between recursion and iteration.
8. Define Acyclic Graph.
9. What is in-place sorting?
10. Find worst case time complexity of (i) linear search (ii) binary search if $n=1000$.

PART-B (5 X 5 = 25 MARKS)
Answer ALL Questions

20. Consider a hash table of size 7 and hash function $h(k) = k \bmod 7$. Draw the table that results after inserting in the given order, the values. 19,26,13,48,17 for each of the three scenarios.
- a) When collisions are handled by separate chaining.
 - b) When collisions are handled by linear probing.
 - c) When collisions are handled by double hashing using second hash function $h' = 5 - (5 \bmod k)$.

11. a. Discuss C++ operators, their precedence and associativity. **OR**
 b. What do you mean by pure virtual function? Mention its purpose.
12. a. Distinguish between the terms class template and template class. **OR**
 b. Explain the C++ stream classes for file operations.
13. a. Translate the given infix expression to postfix expression using stack $((A+B)*D)^{(E-F)}$ **OR**
 b. Write an algorithm which deletes the last node from linked list.
14. a. Write a program to find the factorial of a given number using recursion. **OR**
 b. Write a function to insert an element into BST.
15. a. Show all the passes using insertion sort for the list 54, 26, 93, 17, 77, 31, 44, 55, 20. **OR**
 b. Show Merge Sort sorts the following sequence of numbers using a diagram {142, 543, 123, 65, 453, 879, 572, and 434}.

PART-C (3 X 10 = 30 MARKS)
Answer any THREE Questions

16. What is a friend function? What are its merits and demerits? Write a C++ program to add two complex numbers using friend functions.
17. What are the various types of access specifier of base class? Explain their usage with an example for each.
18. Represent the polynomial in a suitable data structure and write a function to add two polynomials.
19. Write an algorithm to implement Depth-first search? How is Depth-first search different from Breadth-first search?

PART-B (5 X 5 = 25)
Answer ALL Questions

11. a. What is a Class selector and how does it differ from an ID selector? Give examples. **OR**
 b. What are the five possible values for "position" in CSS?
12. a. What is a local and global variables in PHP? Give example. **OR**
 b. Write a program in PHP to print.

ISLAMIAH COLLEGE [AUTONOMOUS]-VANIYAMBADI-2
END SEMESTER EXAMINATIONS, APRIL - 2019

Time: 3Hrs

Max. 75 Marks

Subject: C++ & Data Structures

Sub. Code: U5CC3001

PART-A (10 X 2 = 20 MARKS)

Answer ALL Questions

1. Write short notes on programming paradigms
2. List ten Math library functions in C++.
3. What is a conversion function?
4. Define file streams.
5. What is a circular list?
6. Define data structure and its types. What is its need?
7. What is recursion? How to verify a recursive function?
8. What is a binary search tree?
9. Find the worst and best time complexity among n , $\log n$, $n \log n$, n^2
10. What is divide and conquer? Name sorting methods which uses it.

PART-B (5 X 5 = 25 MARKS)

Answer ALL Questions

11. (a) Discuss C++ operators, their precedence and associativity.
(Or)
(b) Distinguish between overloading and overriding.
12. (a) Explain new and delete operators in dynamic memory management
(Or)
(b) What is a virtual base class? When and why make a class virtual?

13. (a) Write algorithm to implement a stack using arrays and using link list.
(Or)

- (b) Evaluate the following prefix expressions

(i) $+ * 2 + / 14 2 5 1$ (ii) $- * 6 3 - 4 1$ (iii) $+ + 2 6 + - 13 2 4$

14. (a) Write an algorithm for the preorder traversal of a binary tree using stacks.

(Or)

- (b) Write a program in C++ using operator overloading to find factorial of a given number.

15. (a) What is insertion sort? Write a program to sort the given list of integers using insertion sort.

(Or)

- (b) What is Hashing? Explain different Hash function method in detail. Explain each one.

PART-C (3 X 10 = 30 MARKS)

Answer any THREE Questions

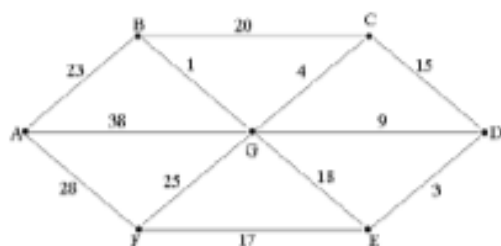
16. Distinguish between the following terms:

- (i). Objects and classes
- (ii) Abstraction and Encapsulation
- (iii). Inheritance and polymorphism
- (iv) Dynamic binding and message passing

17. Explain the various forms of inheritance supported by C++. Give an example for each.

18. Write an algorithm to convert an infix expression to a postfix expression. Execute your algorithm with the following infix expression as your input.
 $(m + n) * (k + p) / (g / h)^a (a^b / c)$

19. Consider the following undirected graph:



- (i) Find the adjacency list representation of the graph.
- (ii) Find a depth-first spanning tree starting at A.
- (iii) Find a breadth-first spanning tree starting at A.

20. Draw the 11-item hash table resulting from hashing the keys 12, 44, 13, 88, 23, 94, 11, 39, 20, 16 and 5 using the hash function $h(i) = (2i+5) \bmod 11$

**ISLAMIAH COLLEGE [AUTONOMOUS] VANIYAMBADI
END SEMESTER EXAMINATIONS, APRIL - 2019**

Time: 3 Hrs

Max. Marks: 75

Subject: Object Oriented Programming With C++

Sub. Code: U3BC3001

PART – A (10 X 2 = 20)

Answer ALL Questions

1. Define data hiding.
2. What is type cast operator?
3. Define default arguments?
4. Define Constructor
5. What is an abstract class?
6. Define 'this' pointer.
7. What is a file?
8. What is Template?
9. Define non- type template arguments
10. Define Exception.

PART – B (5 X 5 =25)

Answer ALL Questions

11. a. What are Tokens? Discuss about Tokens with suitable examples.
(Or)
b. Discuss about applications of OOP.
12. a. What is member function? Explain.
(Or)
b. Write a C++ program to illustrate copy constructor.

13. a. Explain the multiple Inheritance with examples.
(Or)
b. Explain any two types of Inheritance.
14. a. Describe the use of File Pointers
(Or)
b. Write short notes on opening and closing a file
15. a. Explain the function templates with multiple parameters.
(Or)
b. Explain relational operation in manipulating strings.

PART – C (3 X 10 = 30)

Answer any THREE Questions

16. Explain the basic concepts of OOPs.
17. Discuss the function overloading with an example program.
18. Explain the concept of Operator Overloading with suitable illustration.
19. Explain how will you work with file in C++.
20. Explain "Exception Handling" mechanism with in C++

**ISLAMIAH COLLEGE [AUTONOMOUS]
VANIYAMBADI**

TIME : 3 Hrs

MAX. 75 MARKS

Class: II B.Sc. (CS)/BCA/B.Sc.,(SW)

Semester III

Sub Code: U5CC3001

C++ & Data structures

PART-A (10 X 2 = 20 MARKS)

Answer ALL Questions

1. What is object-oriented programming?
2. What are the advantages of inline functions
3. List the rules for overloading operators
4. Define Stream.
5. What is meant by the 'stack overflow' condition?
6. What are the benefits of doubly linked list?
7. How does a stack differ from queue.
8. What is recursion?
9. What are the hashing collision resolution techniques?
10. What is insertion sort?

PART-B (5 X 5 = 25 MARKS)

Answer ALL Questions

11. (a) Draw the hierarchy of C++ data types and discuss.
(Or)
(b) Distinguish between struct and class. Why C++ contains both?
12. (a) What is multiple inheritance? What ambiguity arises in it and how can it be resolved?
(Or)
(b) Explain the concept of the exception handling with suitable example.

13. (a) Implement the operation of a circular queue
(Or)

- (b) Find the prefix equivalent of the expression
 $(3 + 5) * 7 / (8 * 9 + (10 * 11) \% 12)$

14. (a) Implement all tree traversal techniques.

(Or)

- (b) Explain how to write and verify a recursive functions

15. (a) What are the differences between internal sorting and external sorting?

(Or)

- (b) Perform a radix sort on the following data.
656,87,9,10,556,17,285,35,5,620.

PART-C (3 X 10 = 30 MARKS)

Answer any THREE Questions

16. Discuss C++ operators, their precedence and associativity.
17. What is polymorphism? How polymorphism is achieved at (a) compile time (b) run time?
18. Describe an algorithm to evaluate postfix expression using stack.
19. Explain how shortest path is found in a graph.
20. What is Hashing? Explain different Hash function method in detail. Explain each one.

ISLAMIAH COLLEGE [AUTONOMOUS] -VANIYAMBADI
END SEMESTER EXAMINATIONS, DECEMBER - 2020

TIME: 3 Hrs

MAX. 75 MARKS

Class: II B.Sc (CS/SW)/ II B.C.A

Semester III

USCC3001: C++ and Data Structures

PART-A (10 X 2 = 20 MARKS)

Answer ALL Questions

1. What is a derived data type?
2. Write short notes on programming paradigms
3. What is Implicit Type Conversion?
4. What is multiple inheritance?
5. Define data structure and its types.
6. What is a doubly linked list?
7. How to validate a recursive function?
8. What is a binary search tree?
9. What is Hashing?
10. What is divide and conquer?

PART-B (5 X 5 = 25 MARKS)

Answer ALL Questions

11. (a). Draw the hierarchy of C++ data types and discuss.
 (Or)
 (b). Discuss C++ operators, their precedence and associativity.
12. (a) Write short notes on predefined streams. Explain the stream classes for console operations.
 (Or)
 (b) What are manipulators? List five manipulators with meaning and example.

13. (a) Explain how an arbitrary arithmetic expression can be evaluated using a stack. Explain using the example $2 + 5 * 15 + 30 / 3$.
 (Or)

- (b) Translate the given infix expression into post-fix notation:
 $A + (B * C - (D / E / F) * G) * H$

14. (a) Write an algorithm for the preorder traversal of a binary tree using stacks.

(Or)

- (b). Explain the difference between depth first and breadth first searching techniques of a graph.

15. (a) What is insertion sort? Write a program to sort the given list of integers using insertion sort.

(Or)

- (b) What is the worst case time complexity of (i) linear search (ii) binary search? Find it if $n=1000$.

PART-C (3 X 10 = 30 MARKS)

Answer any THREE Questions

16. Write a class to represent a vector. Include member functions to perform the following:

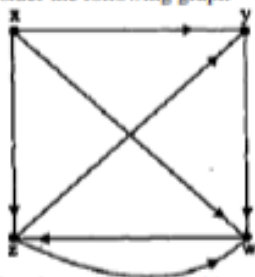
- (a) To create the vector
- (b) To modify the value of a given element
- (c) To multiply by a scalar value
- (d) To display the vector in the form (10, 20, 30 ...)
- (e) Add two vectors and display the resultant vector by passing objects as function arguments.

17. Discuss three ways C++ supports in formatted console I/O operations.

18. What are the three different ways of representing a polynomial using arrays? Represent the following polynomials using any three different methods and compare their advantages and disadvantages.

- (i) $7x^5 - 8x^4 + 5x^3 + x^2 + 2x + 15$ (ii) $3x^{100} - 5x^{65} - 10$

19. Consider the following graph



Let the nodes be stored in memory in an array G as :G: X, Y, Z, W

- (i) Find the adjacency matrix A of the graph G.
- (ii) Find the path matrix P of G using powers of the adjacency matrix -A.
- (iii) Is G strongly connected?

20. Work through Binary Search algorithm on an ordered file with the following keys {1,2,3,4,5,6,7,8,9,10,11,12,13,14,15}. Determine the number of key comparisons made while searching for keys 2, 10 and 15.

ISLAMIAH COLLEGE [AUTONOMOUS] VANIYAMBADI
END SEMESTER EXAMINATIONS, MAY - 2019

Time: 3 Hrs

Max. Marks: 75

Subject: Object Oriented Programming With C++

Sub. Code: U3CS3001 / U0CS3001

PART-A (10 X 2 = 20)
Answer ALL the Questions

1. What is an array?
2. What is meant by an exception?
3. Define object class.
4. List out any two features of static keyword
5. Define the term of operator and example?
6. What is Function overloading?
7. Write the syntax of ternary operator.
- 8 What do you mean by Destruction?
9. Write the syntax of file input stream.
10. Describe Random access

PART-B (5 X 5 = 25)
Answer ALL the Questions

11. a. Write a short note on Advantages of OOP.
(Or)
b. Explain branching statements used in C++.

12. a. Discuss Inline Function with an example.
(Or)
b. Describe about the dynamic memory allocation.
13. a. Mention the rules for Operator Overloading.
(Or)
b. Write a short note on Function and Class template.
14. a. Explain Multiple and Multilevel inheritance.
(Or)
b. Explain Pure Virtual functions
15. a. Details about exception handling in c++ with example
(Or)
b. Different between I/O Stream and file stream

PART – C (3 X 10 = 30)
Answer any THREE Questions

16. Explain in detail about i) User Define Types ii) Abstract Types
17. Explain Friend function with example.
18. Describe about the Operator overloading with a suitable program.
19. Write a C++ Program implementing the use of Inheritance.
20. Discuss how will you read and write in file with an example.

ISLAMIAH COLLEGE [AUTONOMOUS]-VANIYAMBADI-2

END SEMESTER EXAMINATIONS, MAY - 2019

Sub. Code: U5CC3001 C++ & Data Structures

TIME: 3Hrs

MAX. 75 MARKS

Class: II-B.SC (CS)/ (ECS)/ (SW)

Semester III

PART-A (10 X 2 = 20 MARKS)

Answer ALL Questions

1. Define (i) *abstraction* and (ii) *encapsulation*.
2. What are dereferencing operators?
3. Write the syntax of `set()` function.
4. What is an *abstract* class? Why it is required?
5. Define dynamic data structures. Give examples.
6. What is the role of header node in circular linked list?
7. Recursion is better than iteration. Critically comment on this statement.
8. What is a binary search tree?
9. Name two methods to handle the situation of collision in hashing.
10. What are the complexity of Insertion sort and Bubble Sort?

PART-B (5 X 5 = 25 MARKS)

Answer ALL Questions

11. What is a pure virtual function? Mention its purpose.
(OR)
What is a friend function? What are its merits and demerits?
12. Explain the C++ stream classes for file operations.
(OR)
What is polymorphism? How polymorphism is achieved at
(a) compile time (b) run time?

13. Find the prefix equivalent of the expression
 $(3 + 5) * 7 / (8 * 9 + (10 * 11) \% 12)$
(OR)

Write a C++ function to delete a node pointed by p from a doubly linked list.

14. Write an algorithm that accepts a pointer to a BST and deletes the smallest element from it.

(OR)

Explain the difference between depth first and breadth first searching techniques of a graph.

15. Consider following list: 310, 285, 179, 625, 351, 423, 861, 254, 450, 520. Sort the above list using mergesort. Show all intermediate steps.

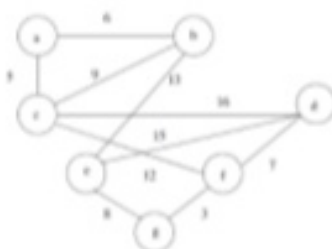
(OR)

Consider a list of numbers 9, 20, 6, 10, 14, 8, 60, 11 given. Sort them using Quick Sort. Give step wise calculation.

PART-C (3 X 10 = 30 MARKS)

Answer any THREE Questions

16. Compare and contrast inline function and macro function. Write an inline function and a macro to find the largest of three numbers.
17. Write a program to create a data file and store name and phone number using a class object.
18. Write a function to reverse the links in a linked list such that the last node becomes the first and the first becomes the last by traversing the linked list only once.
19. Using Dijkstra's method find a spanning tree of the following graph



20. Write an algorithm for heap sort technique. Construct the heap showing the insertion of each of the following elements in separate figures.

44 30 60 77 60 50

ISLAMIAH COLLEGE [AUTONOMOUS] -VANIYAMBADI
END SEMESTER EXAMINATIONS, DECEMBER - 2020

TIME: 3 Hrs

MAX. 75 MARKS

Class: II B.Sc (CS/SW)/ II B.C.A

Semester III

USCC3001: C++ and Data Structures

PART-A (10 X 2 = 20 MARKS)

Answer ALL Questions

1. Write short notes on dynamic allocation operators.
2. List out five Math library functions in C++.
3. What is a conversion function?
4. What is a virtual function?
5. What is a circular list?
6. Define (i) Stack (ii) Queue.
7. What are the steps involved in writing a recursive function?
8. What is recursion?
9. What is insertion sort?
10. What is in-place sorting?

PART-B (5 X 5 = 25 MARKS)

Answer ALL Questions

11. (a). Distinguish between overloading and overriding.
(Or)
(b). Explain at least six new operators added by C++ which aid OOP.
12. (a) What is a virtual base class? When and why make a class virtual?
(Or)
(b) Discuss the various forms of `get()` function.
13. (a) Differentiate among data type, abstract data type, and data Structure.
(Or)
(b) Write a function using stack to convert an infix expression to postfix.
14. (a) Differentiate between recursion and iteration.
(Or)
(b). Write an algorithm to determine if two binary trees are similar.

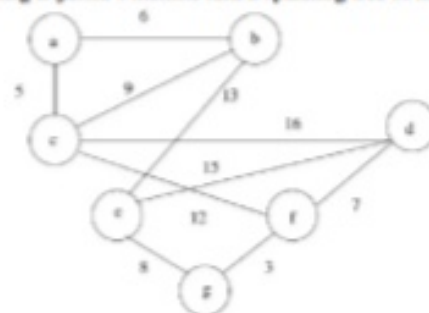
15. (a) Write down the algorithm for quick sort. Show how quick sort sorts the following sequences of keys: 5, 5, 8, 3, 4, 3, 2
(Or)

(b) Explain methods to handle the situation of collision in hashing.

PART-C (3 X 10 = 30 MARKS)

Answer any THREE Questions

16. Write a C++ program to find the volume of a cube, cylinder, sphere, cone and rectangular box using function overloading.
17. Write a program in C++ to solve general quadratic equation using polymorphism technique.
18. Define Stack. List its operations and applications. What are the different types of implementation of stack?
19. Using Dijkstra's method find a spanning tree of the following graph



20. Explain the concept of hashing using division method of hashing. Store the following values in a hash table of size 11. Values: 25, 45, 96, 101, 102, 162, 197, 201. Show the hash table after storing the values.

ISLAMIAH COLLEGE [AUTONOMOUS], VANIYAMBADI
END SEMESTER EXAMINATIONS, JANUARY - 2021

Time: 3 Hrs.

Max: 75 Marks

Subject: C++ and Data Structures

Sub. Code: U8CC3001

PART-A (10 X 2 = 20)
Answer ALL the Questions

1. Define (i) *abstraction* and (ii) *encapsulation*.
2. What are dereferencing operators?
3. Write the syntax of `set()` function.
4. What is an *abstract* class? Why it is required?
5. Define dynamic data structures. Give examples.
6. What is the role of header node in circular linked list?
7. Recursion is better than iteration. Critically comment on this statement.
8. What is a binary search tree?
9. Name two methods to handle the situation of collision in hashing.
10. What are the complexity of Insertion sort and Bubble Sort?

PART-B (5 X 5 = 25)
Answer ALL the Questions

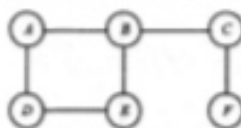
11. a) What is a pure virtual function? Mention its purpose.
(OR)
b) What is a friend function? What are its merits and demerits?
12. a) Explain the C++ stream classes for file operations.
(OR)
b) What is polymorphism? How polymorphism is achieved at
(a) compile time (b) run time?
13. a) Find the prefix equivalent of the expression
 $(3 + 5) * 7 / (8 * 9 + (10 * 11) \% 12)$
(OR)

b) Write a C++ function to delete a node pointed by `p` from a doubly linked list.

14. a) Write an algorithm that accepts a pointer to a BST and deletes the smallest element from it.
(OR)
b) Explain the difference between depth first and breadth first searching techniques of a graph.
15. a) Consider following list: 310, 285, 179, 625, 351, 423, 861, 254, 450, 520.
Sort the above list using mergesort. Show all intermediate steps.
(OR)
Consider a list of numbers 9, 20, 6, 10, 14, 8, 60, 11 given. Sort them using Quick Sort. Give step wise calculation.

PART-C (3 X 10 = 30)
Answer any THREE Questions

16. Compare and contrast inline function and macro function. Write an inline function and a macro to find the largest of three numbers.
17. Write a program to create a data file and store name and phone number using a class object.
18. Write a function to reverse the links in a linked list such that the last node becomes the first and the first becomes the last by traversing the linked list only once.
19. Determine the BFS and DFS traversals of the graph shown in Fig.



20. Write down the algorithm for quick sort. Show how quick sort sorts the following sequences of keys: 5, 5, 8, 3, 4, 3, 2

**ISLAMIAH COLLEGE [AUTONOMOUS], VANIYAMBADI
END SEMESTER EXAMINATIONS, FEBRUARY - 2022**

Time: 3 Hrs

Max. 75 Marks

Subject: Object Oriented Programming in C++

Sub. Code: U0BC3001

**PART-A (10 X 2 = 20)
Answer ALL Questions**

1. Define encapsulation.
2. What is a manipulator? Give examples?
3. Define an array of object.
4. What do you mean by destructor?
5. What is an overloading and its types?
6. List the types of Inheritance.
7. Define virtual function
8. Differentiate static binding with dynamic binding.
9. What is random access file?
10. Defines class template.

**PART-B (5 X 5 = 25)
Answer ALL Questions**

11. a) Mention the benefit of Object Oriented Programming.
(Or)
b) Discuss the control structures in C++ with an example

12. a) Explain the function and its types.

(Or)

- b) Comment on function overloading with program.

13. a) Write a short notes on operator overloading with suitable example.

(Or)

- b) Briefly explain virtual function with an example.

14. a) Explain on C++ Streams

(Or)

- b) Discuss on the concept of I/O operation on files.

15. a) Enumerate the concept of Templates

(Or)

- b) Write a program in OOP to create a student information using file

**PART-C (3X 10 = 30)
Answer any THREE Questions**

16. Discuss the basic concept of OOP.
17. Explain in detail various constructors with examples
18. Enumerate in detail about various types of Inheritance.
19. Explain error handling in file operations.
20. Describe the importance of manipulation on strings with example.

**ISLAMIAH COLLEGE [AUTONOMOUS], VANITYAMBADI
END SEMESTER EXAMINATIONS, FEBRUARY - 2022**

Time : 3 Hrs

Max Marks : 75

Subject: C++ & Data Structures

Sub. Code: U8CC3001 / U5CC3001

PART – A (10 X 2 = 20)

Answer ALL Questions

1. What is token?
2. What is class?
3. What is Inheritance?
4. What is template?
5. What is array?
6. What is stack?
7. What is recursion?
8. What is function?
9. What is sorting?
10. What is searching?

PART – B (5 X 5 = 25)

Answer ALL Questions

11. (a) Describe the control structures in C++?
(Or)
(b) What are the functions in C++?
12. (a) Explain operator overloading?
(Or)
(b) Explain about exception handling?
13. (a) Explain about the conversion of infix to postfix operations?
(Or)

(b) Explain doubly linked lists?

14. (a) Explain recursion?
(Or)
(b) Explain BFS?
15. (a) Explain sorting?
(Or)
(b) Explain searching?

PART – C (3 X 10 = 30)

Answer any THREE Questions

16. Discuss the principles of OOP's?
17. Explain virtual functions and polymorphism?
18. What are the different views of data?
19. Explain dijksta's algorithm?
20. Explain about hashing?

**ISLAMIAH COLLEGE [AUTONOMOUS], VANIYAMBADI
END SEMESTER EXAMINATIONS, FEBRUARY - 2022**

Time: 3 Hrs

Max. Marks: 75

Subject: C++ & Data Structures

Subject Code: UACC3001

PART - A (10 X 2 = 20)
Answer ALL the Questions

1. What is mean by an object in C++?
2. Define Polymorphism
3. Define Pointers.
4. What is mean by virtual function?
5. Define stack.
6. Define Queue.
7. What is mean by doubly linked List
8. what is mean by Binary Tree
9. Define Graph
10. Define Hash Key

PART - B (5 X 5 = 25)
Answer ALL the Questions

11. (a) Explain the basic concepts of a class
(Or)
(b) Explain Operator Overloading with example
12. (a) Write short notes on Pointers in C++
(Or)
(b) Explain Exception Handling in C++

13. (a) List out the applications of stack and queue
(Or)
(b) Convert the following expression to Postfix
($A + ((B - D) * 2) * D / F$)

14. (a) Explain with algorithm Polynomial Addition
(Or)
(b) Explain with example Pre order and post order tree traversal
15. (a) Explain Breath First Search
(Or)
(b) Explain Hashing

PART - C (3 X 10 = 30)
Answer any THREE Questions

16. What is mean by a constructor? List out the characteristics and explain its types in a detail.
17. Explain with example types of inheritance in C++
18. Explain in detail Stack and its operations using pointers
19. Explain in detail the implementation of doubly linked list
20. Explain with algorithm Dijkstra's Shortest Path algorithm

**ISLAMIAH COLLEGE [AUTONOMOUS], VANIAMBADE
END SEMESTER EXAMINATIONS, JUNE - 2022**

Time: 3 Hrs

Max. Marks: 75

Subject: C++ and Data Structures

Subject Code: UACC3001

**PART-A(10 X 2 = 20)
Answer ALL the Questions**

1. Define Class
2. Define function overloading.
3. What are constructors?
4. What is file?
5. Define Data Structures.
6. Translate infix expression into its equivalent post fix expression:
(A-B)*(D/E)
7. What is an Array?
8. Define Binary tree.
9. What is a graph?
10. What is DFS?

**PART-B(5 X 5 = 25)
Answer ALL the Questions**

11. a. Explain different types of expressions in C++.
(Or)
b. Write a program to overload unary minus operator.
12. a. Explain the opening and closing a file with examples.
(Or)
b. Explain the concept of Exception handling with an example.
13. a. Explain different views of data.

- (Or)
- b. Explain about different queue operations.
14. a. Explain the applications of List.
(Or)
b. Discuss the different ways of traversing a binary tree.
15. a. Explain different types of hashing functions.
(Or)
b. Write short notes on Breadth First Search.

**PART-C(3 X 10 = 30)
Answer any THREE Questions**

16. Explain inheritance with example program.
17. What are virtual functions? Explain their needs using a suitable example. What are the rules associated with virtual function?
18. Describe a stack and its operations at a logical level.
19. Explain in detail about double linked list with an example.
20. Explain Dijkstra's Shortest Path Algorithm with an example.