D.K.M. COLLEGE FOR WOMEN (AUTONOMOUS),VELLORE-1.

DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS

C++ AND DATA STRUCTURES

UNIT I SECTION-A 2 MARKS

1. Define Class.
2. Define Object.
3. What are keywords?
4. Define String.
5. What are the various types of Constants?
6. What is Variable?
7. What are the difference between POP and OOP?
8. Write the qualities of software product.
9. What is the application of C ++?
10. What is meant by Compiling and Editing?
11. Write about Memory management operator.
12. What are the advantages of new operator?
13. Define C++ Streams.
14. Define abstract Class.
15. Define polymorphism and its types.

SECTION-B 5 MARKS

1. Write about Benefits of OOP.
2. Explain about the structure of C++.
3. Explain about Scope resolution operator with example.
4. Write short notes on Manipulators.
5. What is Operator Overloading? Explain.
6. Define Expressions. Explain its types.

SECTION-C 10 MARKS

1. Explain briefly about Basic Concepts of OOP with neat diagram.
2. What is data type? Explain its types with example.
3. Explain briefly about Control Structures in C++.
4. Write about unformatted I/O Statements.

5. Explain about formatted I/O operations.
6. What is Polymorphism? Explain.

UNIT II SECTION-A 2 MARKS

1. Define Function.
2. Define Function Prototype.
3. What is Actual Argument?
4. What is Passing Argument?
5. Define Virtual Function.
6. What is Member Function?
7. Define static data members.
8. Define Static Member Functions.
9. What is meant by Constructors?
10. Define parameterized Constructors.
11. What is Multiple Constructor?
12. Define Dynamic Constructor.
13. Define Overloading Unary Operators.
14. Define Overloading Binary Operators.
15. What is meant by Type Conversions?
16. What is Meant by this Pointer?
17. Define Pure Virtual Function.

SECTION-B 5 MARKS

1. Write the Difference between put() and get() functions.
2. Explain about Inline Function with example.
3. Explain Friend Function with Example.
4. Explain Nesting of Member Function with example.
5. What are the Special Characteristics of Constructors.
6. Write short notes on Copy Constructor with example.
7. Write the Rules for Overloading Operators.
8. Explain about Constructors in Derived Classes.
9. What are the rules for Virtual Functions?
10. Explain parameter passing in function.
11. Describe the multiple Inheritance.

SECTION-C 10 MARKS

1. What is Function Overloading? Explain with example.
2. What is array? Explain arrays within a class with example program.
3. What are the difference between Constructor and Destructors? Explain with proper example.
4. What is Inheritance? Explain its types with neat diagram?
5. Explain Call by reference and Return by reference with example.
6. Explain about Friend Function. List out merits and demerits of friend function.
7. Explain in detail about usage of Destructors.

UNIT III SECTION-A 2 MARKS

1. Define Data Structure.
2. What is Linear data structure? Give an example.
3. Define Algorithm.
4. Define Array.
5. Define Ordered list.
6. Define Garbage collection.
7. What is Stack?
8. What is Stack overflow?
9. What is Stack Underflow?
10. What are the disadvantages of Stack implementation?
11. Define Rear.
12. List the operations in Stack.
13. List the operations in Queue.
14. What is Queue?
15. What are the limitations of Linear Queue?

SECTION-B 5 MARKS

1. Write about Primitive Data types.
2. Write about Composite Data types.
3. Explain the types of Data Structures.
4. Explain the types of Array with example.
5. To evaluate postfix expression of A+B*C^D for A=2, B=-1, C=2, D=3 using algorithm Eval_Postfix.

6. Convert the given Infix expression ((A+B+C)^D)*(G+H) into postfix and prefix expression.
7. Write short notes on Circular Queue and its operations.
8. Evaluate the expression from infix to prefix: (a*b-f*h)^d
9. Write an algorithm to finding the factorial using recursion.
10. Write an algorithm for PUSH and POP operations.
11. Explain enqueue and dequeue operation in queue.

SECTION-C 10 MARKS

1. Explain briefly about array operations.
2. What is Ordered List? Explain the various representation, advantages and disadvantages of Ordered List.
3. Explain Briefly about Stack Operations.
4. Explain about Evaluation of Expressions.
5. Explain about Queue Operations.
6. Write an algorithm to convert an expression from infix to postfix.
7. Explain various operations performed on circular queue.

UNIT IV SECTION-A 2 MARKS

1. Define Linked List.
2. Define the representation of Circularly Linked List.
3. What are the advantages of Linked List?
4. Define Singly Linked List.
5. Define Doubly Linked List.

SECTION-B 5 MARKS

1. What are the advantages and disadvantages of Circularly Linked List?
2. How to add a node to Singly Linked List? Explain.
3. What are the advantages and disadvantages of Doubly Linked List?
4. Write insertion and deletion operations of Doubly Linked List.
5. Write an algorithm for adding two polynomials using linked list.
6. Write short notes on applications of Linked List.

SECTION-C 10 MARKS

1. What are the operations of Singly Linked List? Explain.
2. What are the operations of Doubly Linked List? Explain.

3. Write an algorithm to add two polynomials. Give example.

UNIT V SECTION-A 2 MARKS

1. Define tree.
2. What are the types of Binary tree?
3. What is skewed binary tree?
4. Define Threaded Binary trees.
5. What is weighted Graph? Give example.
6. Define Graph.
7. Define BFS.
8. Define DFS.
9. Define In order traversal.
10. Define Pre order traversal.
11. Define Post order traversal.

SECTION-B 5 MARKS

1. Explain about the Representation of Binary trees.
2. Explain the types of Graphs.
3. Write an Algorithm using DFS traversal technique.
4. Explain the storage representation of graphs with example.
5. Write an algorithm for insertion and deletion operations on binary Search tree.
6. Explain BFS in detail.

SECTION-C 10 MARKS

1. Explain briefly about Binary Tree traversals.
2. Explain about Representation of Graphs.
3. Explain briefly about Graph Traversals.