

A Book to Guide the Knowledge Seekers on

- Programming in C++
- Data Structures & Algorithms.
- Dot Net Programming.

Question Everything & Learn Something

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Programming in C++

<u>UNIT I</u>

ONE MARK:

a) \r

1. Which of the following is the correct syntax of including a user defined header files in C++? a) #include <userdefined.h> b) #include <userdefined> c) #include "userdefined" d) #include [userdefined] 2. Which of the following is a correct identifier in C++? a) 7var name b) 7VARNAME c) VAR 1234 d) \$var name 3. Which of the following is called address operator? a) * b) & d) % c) _ 4. Which of the following is used for comments in C++? b) /* comment */ a) // comment c) both // comment or /* comment */ d) // comment */ 5. What are the actual parameters in C++?a) Parameters with which functions are called b) Parameters which are used in the definition of a function c) Variables other than passed parameters in a function d) Variables that are never used in the function 6. What are the formal parameters in C++? a) Parameters with which functions are called b) Parameters which are used in the definition of the function c) Variables other than passed parameters in a function d) Variables that are never used in the function 7. Which function is used to read a single character from the console in C++?a) cin.get(ch) b) getline(ch) c) read(ch) d) scanf(ch) 8. Which function is used to write a single character to console in C++?a) cout.put(ch) b) cout.putline(ch) c) write(ch) d) printf(ch) 9. What are the escape sequences? a) Set of characters that convey special meaning in a program b) Set of characters that whose use are avoided in C++ programs c) Set of characters that are used in the name of the main function of the program d) Set of characters that are avoided in cout statements 10. Which of the following escape sequence represents carriage return?

b) \n

c) nrd) \c 11. Which of the following escape sequence represents tab? a) \t b) trd) \a c) \b 12. Who created C++? a) Bjarne Stroustrup b) Dennis Ritchie c) Ken Thompson d) Brian Kernighan 13. Which of the following is called insertion/put to operator? a) << b) >>d) < c) > 14. Which of the following is called extraction/get from operator? a) << b) >>

15. A language which has the capability to generate new data types are called

a) Extensible	b) Overloaded
c) Encapsulated	d) Reprehensible

TWO MARKS:

- 1. Define OOP.
- 2. Define functions.
- 3. Write down the characteristics of POP.
- 4. Define objects.
- 5. List the basic concepts of OOP.
- 6. Define classes.
- 7. Define data abstraction.
- 8. Define encapsulation.
- 9. Define inheritance.
- 10. Define polymorphism.
- 11. Define dynamic binding.
- 12. Define message passing.
- 13. Define identifiers.
- 14. List any 4 applications of OOPS.
- 15. What are tokens?
- 16. What are keywords?
- 17. Define constants.
- 18. List the user-defined data types.
- 19. Write down the derived data types.
- 20. What are the uses of void?
- 21. Define arrays.
- 22. Define functions.
- 23. Define pointers.
- 24. What are the uses of enum?
- 25. What are the ways of creating symbolic constants?

- 26. What do you mean by type compatibility?
- 27. Define dynamic initialization.
- 28. Define reference variables.
- 29. What do you mean by call by reference?
- 30. What is operator overloading?
- 31. List the operators in C++.
- 32. What is the use of scope resolution operator(::)?
- 33. Write down about the member dereferencing operators.
- 34. What are free storage operators?
- 35. What is the use of the new operator?
- 36. Differentiate new and malloc().
- 37. Define manipulators.
- 38. What is the use of endl operator?
- 39. What is the use of setw manipulators?
- 40. Define expression.
- 41. List out the types of expressions.
- 42. Define compound expressions.
- 43. Define constant expressions.
- 44. Define integral expressions.
- 45. Define float expressions.
- 46. Define pointer expressions.
- 47. Define relational expressions.
- 48. Define logical expressions.
- 49. Define bitwise expressions.
- 50. What is a chained assignment?
- 51. What is an embedded assignment?
- 52. What do you mean by compound assignment?
- 53. Define automatic conversion.
- 54. Define integral widening conversion.
- 55. Write down the operators that cannot be overloaded.
- 56. Define structured programming.
- 57. Write about IF statement.
- 58. Write about SWITCH statement.
- 59. Write about DO WHILE statement.
- 60. Write about WHILE statement.
- 61. Write about FOR statement.

FIVE MARKS:

- 1. Write down the characteristics of POP.
- 2. Discuss the features of OOP.
- 3. Explain the use of an object.
- 4. Describe data abstraction and encapsulation.
- 5. Explain about inheritance.
- 6. Explain about polymorphism.
- 7. What is dynamic binding, explain.
- 8. Describe about message passing.
- 9. Write down any 5 benefits of OOPS.
- 10. Explain object -based programming language.
- 11. Explain object-oriented programming language.

- 12. List down the areas where OOP can be applied.
- 13. Explain about identifiers and constants.
- 14. Describe about the basic datatypes in C++.
- 15. Explain about the enumerated data type.
- 16. Describe pointers.
- 17. What are symbolic constants?
- 18. What do you mean by type compatibility?
- 19. Explain the dynamic initialization of variables.
- 20. What are reference variables, explain.
- 21. Explain about the scope resolution operator(::).
- 22. Describe manipulators.
- 23. Describe about type cast operators.
- 24. Explain about the various expressions with examples.
- 25. What are special assignment expressions, explain.
- 26. What do you mean by implicit conversion?
- 27. What is meant by operator overloading?
- 28. Write down the precedence of operators.

TEN MARKS:

- 1. Explain POP in detail.
- 2. Describe in details about the basic concept of OOP.
- 3. Elucidate memory management operators in detail.
- 4. Explain the various control structures in detail.
- 5. Explain operators used in C++.
- 6. Describe about tokens with their types.
- 7. Discuss about the data types used in C++.
- 8. Explain structure of a C++ program with example.

UNIT II

ONE MARKS:

- 1. Which of the following is the default return value of functions in C++?
- a) int b) char
- c) float d) void

2. What happens to a function defined inside a class without any complex operations (like looping, a large number of lines, etc)?

- a) It becomes a virtual function of the class
- b) It becomes a default calling function of the class

c) It becomes an inline function of the class

- d) The program gives an error
- 3. What is an inline function?
- a) A function that is expanded at each call during execution
- b) A function that is called during compile time
- c) A function that is not checked for syntax errors

d) A function that is not checked for semantic analysis

4. An inline function is expanded during

a) compile-time	-	b) run-time
c) never expanded		d) end of the program

5. In which of the following cases inline functions may not word?

i) If the function has static variables.

ii) If the function has global and register variables.

iii) If the function contains loops

iv) If the function is recursive

a) i, iv	b) iii, iv
c) ii, iii, iv	d) i, iii, iv

6. When we define the default values for a function?

a) When a function is defined

b) When a function is declared

c) When the scope of the function is over

d) When a function is called

7. Where should default parameters appear in a function prototype?

a) To the rightmost side of the parameter list

b) To the leftmost side of the parameter list

c) Anywhere inside the parameter list

d) Middle of the parameter list

8. If an argument from the parameter list of a function is defined constant then

a) It can be modified inside the function

b) It cannot be modified inside the function

c) Error occurs

d) Segmentation fault

9. Which of the following feature is used in function overloading and function with default argument?

a) Encapsulation

b) Polymorphism

c) Abstraction

d) Modularity

10. What will be the output of the following C++ code?#include<iostream>using namespace std;

```
int fun(int x = 0, int y = 0, int z)
{ return (x + y + z); }
int main()
{
```

```
cout << fun(10);
return 0;
}
a) 10
b) 0
c) Error
```

d) Segmentation fault

```
11. What will be the output of the following C++ code?
#include<iostream>
using namespace std;
```

```
class Test
{
 protected:
  int x;
 public:
  Test (int i):x(i) { }
  void fun() const { cout << "fun() const " << endl; }</pre>
               \{ cout << "fun() " << endl; \}
  void fun()
};
int main()
{
  Test t1 (10);
  const Test t2 (20);
  t1.fun();
  t2.fun();
  return 0;
}
                                              b) fun() const
a) fun()
  fun() const
                                                 fun()
c) fun()
                                               d) fun() const
  fun()
                                                  fun() const
12. What will be the output of the following C^{++} code?
#include <iostream>
using namespace std;
int fun(int=0, int = 0);
int main()
{
 cout << fun(5);
 return 0;
int fun(int x, int y) { return (x+y); }
```

a) -5	b) 0
c) 10	d) 5

13. What will be the output of the following C^{++} code? #include <iostream> using namespace std; void square (int *x, int *y) ł *x = (*x) * --(*y);} int main () { int number = 30;square(&number, &number); cout << number;</pre> return 0; } a) 870 b) 30 c) Error d) Segmentation fault

14. From which function the execution of a C++ program starts?

a) start() function	b) main() function
c) new() function	d) end() function

15. Which of the following is important in a function?

- a) Return type
- b) Function name
- c) Both return type and function name
- d) The return type, function name and parameter list

TWO MARKS:

- 1. What is the use of main()?
- 2. Differentiate main() in C and C++.
- 3. Define function prototyping.
- 4. What do you mean by call by reference?
- 5. Differentiate actual parameter and formal parameter.
- 6. What is an inline function?
- 7. Define default arguments.
- 8. Write down the situations where inline expansion may not work.
- 9. Write about const arguments.
- 10. What do you mean by function overloading?
- 11. Define class.
- 12. What are visibility labels?
- 13. What is an identity label?
- 14. Write down the characteristics of member functions.
- 15. How to nest member functions?
- 16. Write down the characteristics of static data members.
- 17. Write down the properties of static member functions.
- 18. What do you mean by array of objects?

- 19. How can an object be used in a function argument?
- 20. What is a friend function?
- 21. What is the use of a friend class?
- 22. What are const member functions?
- 23. What are pointers to members?
- 24. What is the use of dereferencing operator?
- 25. What do you mean by local class?
- 26. Define constructors.
- 27. Define destructor.
- 28. Define default constructor.
- 29. Define parameterized constructor.
- 30. Why is dynamic initialization of objects necessary?
- 31. What is a copy constructor?
- 32. What are dynamic constructors?
- 33. What are const objects?

FIVE MARKS:

- 1. Explain the use of main().
- 2. Describe call by reference.
- 3. What do you mean by return by reference?
- 4. Explain nesting of member functions with example.
- 5. Describe about private member functions.
- 6. How to allocate memory for objects?
- 7. Explain about static data members.
- 8. Explain static member functions with example.
- 9. Describe array of objects with example.
- 10. Explain pointer to members with example.
- 11. Write down the characteristics of a constructor.
- 12. Explain about constructor with arguments.
- 13. Describe copy constructor with example.
- 14. Discuss about dynamic constructor with example.
- 15. Explain the construction of 2D arrays with example.

TEN MARKS:

- 1. Explain inline functions in detail.
- 2. Describe in detail about default arguments.
- 3. How to overload functions, explain.
- 4. Explain in detail about class.
- 5. How to define member functions, explain.
- 6. Write a C++ program for shopping list items for which the user places an order with a dealer every month, the list includes details such as code number and price of each item. Perform adding and deleting an item from the list.
- 7. When will an object be used as a function argument, explain.
- 8. Explain friend functions in detail.
- 9. Describe in detail about parameterized constructors.
- 10. How to use multiple constructors in a class, explain.
- 11. Describe the dynamic initialization of objects in detail.
- 12. Describe destructors in detail.

UNIT III

ONE MARKS:

{

{

```
1. What will be the output of the following C^{++} code?
#include <iostream>
#include <string>
using namespace std;
class A
         static int a;
  public:
         void show()
     {
                   a++;
                   cout<<"a: "<<a<<endl;
          }
};
int A::a = 5;
int main(int argc, char const *argv[])
{
         A a;
         return 0;
}
a) Error as a private member a is referenced outside the class
b) Segmentation fault
c) No output
d) Program compiles successfully but gives run-time error
2. What happens when objects s1 and s2 are added?
string s1 = "Hello";
string s2 = "World";
string s3 = (s1+s2).substr(5);
a) Error because s1+s2 will result into string and no string has substr() function
b) Segmentation fault as two string cannot be added in C++
c) The statements runs perfectly
d) Run-time error
3. What will be the output of the following C^{++} code?
#include <iostream>
#include <string>
using namespace std;
class A
         static int a;
  public:
         A()
```

```
ł
                   cout << "Object of A is created\n";
          }
         void show()
                   a++;
                   cout<<"a: "<<a<<endl;
         }
};
class B
{
  public:
};
int main(int argc, char const *argv[])
{
         A a1, a2;
         A a3 = a1 + a2;
         return 0;
}
a) Runs perfectly
b) Run-time Error
c) Segmentation fault
d) Compile-time Error
4. What is operator overloading in C++?
a) Overriding the operator meaning by the user defined meaning for user defined data type
b) Redefining the way operator works for user defined types
c) Ability to provide the operators with some special meaning for user defined data type
d) All of the mentioned
5. What is the syntax of overloading operator + for class A?
a) A operator+(argument list){}
                                             b) A operator [+] (argument list) {}
c) int +(argument list){}
                                             d) int [+](argument list){}
6. How many approaches are used for operator overloading?
a) 1
                                             b) 2
c) 3
                                             d) 4
7. Which of the following operator cannot be overloaded?
a) +
                                             b) ?:
c) –
                                             d) %
8. Which of the following operator can be overloaded?
a) ?:
                                             b) ::
                                             d) ==
c).
```

9. Which of the following operator cannot be used to overload when that function is declared as friend function?

a) -=	b)
c) ===	d) []

10. Which of the following operator can be used to overload when that function is declared as friend function?

a) [] b) () c) -> d) |=

11. In case of non-static member functions how many maximum object arguments a unary operator overloaded function can take?

a) 1	b) 2
c) 3	d) 0

12. In case of non-static member functions how many maximum object arguments a binary operator overloaded function can take?

a) 1	b) 2
c) 3	d) 0

13. In the case of friend operator overloaded functions how many maximum object arguments a unary operator overloaded function can take?

a) 1	b) 2
c) 3	d) 0

14. In the case of friend operator overloaded functions how many maximum object arguments a binary operator overloaded function can take?

a) 1	b) 2
c) 3	d) 0

15. What will be the output of the following C++ code?

```
#include <iostream>
#include <string>
using namespace std;
class A
{
         static int a;
 public:
         void show()
     {
                   a++;
                   cout<<"a: "<<a<<endl;
          }
         void operator.()
     {
                   cout << "Objects are added \n";
          }
};
class B
{
```

c) Segmentation fault

b) Runs perfectlyd) Compile-time error

TWO MARKS:

- 1. Define operator overloading.
- 2. Write down the steps involved in the process of overloading.
- 3. Define string.
- 4. What is the use of casting operator?
- 5. What are the conditions that must be satisfied by the casting operator?
- 6. Define inheritance.
- 7. Define base class.
- 8. Define derived class.
- 9. Define single inheritance.
- 10. Define multiple inheritance.
- 11. Define hierarchical inheritance.
- 12. Define multi-level inheritance.
- 13. What are the functions that can have access to private and protected members?
- 14. What is hybrid inheritance?
- 15. What is a sub class?
- 16. What is a direct base class?
- 17. Differentiate direct base class and indirect base class.
- 18. What is virtual base class?
- 19. Define abstract class.
- 20. What is containership?
- 21. Define static binding.
- 22. Define run time polymorphism.
- 23. What is the use of virtual function?
- 24. Define late binding.
- 25. Write about pointers.
- 26. What is the use of dereference operator?
- 27. What are malloc() and calloc()?
- 28. How are arrays of pointers useful?
- 29. What is the use of this pointer?
- 30. How to achieve polymorphism?
- 31. What are pure virtual functions?
- 32. Define abstract base class.

FIVE MARKS:

- 1. Explain the overloading of unary operators.
- 2. How to overload binary operators?

- 3. Explain the process of overloading binary operators using friends.
- 4. Describe manipulation of strings using operators.
- 5. Write down the rules for overloading operators.
- 6. Explain derived class.
- 7. How to make a private member inheritable?
- 8. Explain hierarchical inheritance.
- 9. Explain hybrid inheritance.
- 10. How to nest classes, explain.
- 11. Explain about this pointer.
- 12. Describe the usage of pointers to derived class.
- 13. Write about pure virtual functions.

TEN MARKS:

- 1. Explain the type conversions in detail.
- 2. Discuss in detail about single inheritance.
- 3. Write about multi-level inheritance.
- 4. Explain multiple inheritance.
- 5. Describe in detail about virtual base class.
- 6. Explain about the usage of constructors in derived class.
- 7. Explain
 - a) Declaring and initializing pointers.
 - b) Manipulation of pointers.
 - c) Pointer expressions and pointer arithmetic.
- 8. Describe
 - a) Using pointers with arrays and strings.
 - b) Arrays of pointers.
 - c) Pointers to functions.
 - d) Pointers and strings.
- 9. Explain in detail about pointers to objects.
- 10. Describe virtual functions in detail.

UNIT IV

ONE MARKS:

- 1. How many groups of output of operation are there in c++?
- a) 1 b) 2
- c) 3 d) 4

2. Pick out the correct objects about the instantiation of output stream.

- a) cout b) cerr
- c) clog

d) all of the mentioned

3. What is meant by ofstream in c++?

a) Writes to a file	b) Reads from a file
c) Writes to a file & Reads from a file	d) delete a file

4. What will be the output of the following C++ code?

1. #include <iostream>

2. using namespace std; 3. int main () 4. { char str[] = "Steve jobs"; 5. int val = 65; 6. char ch = 'A';7. 8. cout.width (5); 9. cout << right; cout << val << endl; 10. 11. return 0; 12. } a) Steve jobs b) A c) 65 d) 65 5. What will be the output of the following C^{++} code? 1. #include <iostream>

- 2. using namespace std;
- 3. int main ()
- 4. {
- 5. int n;
- 6. n = 43;
- 7. cout << hex << n << endl;
- 8. return 0;
- 9. }

a) 2c c) 20

b) 2b d) 50

- 6. What is the output of this C++ program in the "test.txt" file?
 - #include <fstream> 1.
 - 2. using namespace std;
 - 3. int main ()
 - 4. {
 - 5. long pos;
 - ofstream outfile; 6.
 - 7. outfile.open ("test.txt");
 - outfile.write ("This is an apple",16); 8.
 - pos = outfile.tellp(); 9.
 - 10. outfile.seekp (pos - 7);
 - outfile.write (" sam", 4); 11.
 - 12. outfile.close();
 - 13. return 0;
 - 14. }
- a) This is an apple
- c) sample

```
b) apple
d) This is a sample
```

- 7. What will be the output of the following C^{++} code?
 - #include <iostream> 1.
 - 2. using namespace std;
 - 3. int main ()
 - 4. ł

5. int n; 6. n = -77; 7. cout.width(4); 8. cout << internal << n << endl; 9. return 0; 10. } a) 77 b) -77 c) - 77 b) -77 d) None of the mentioned

8. What will be the output of the following C++ code?

- 1. #include <iostream>
- 2. #include <locale>
- 3. using namespace std;
- 4. int main()
- 5. {
- 6. locale mylocale("");
- 7. cout.imbue(mylocale);
- 8. cout << (double) 3.14159 << endl;
- 9. return 0;
- 10. }
- a) 3.14 c) Error

- **b) 3.14159** d) 3.69
- 9. How many types of output stream classes are there in c++?

>• 110 ··· 1110/11	·)p••••	• ••• P •••	 •••••••••••••••••
a) 1			b) 2
c) 3			d) 4

10. What must be specified when we construct an object of class ostream?

a) stream

c) memory

b) streambufd) steamostream

TWO MARKS:

- 1. Define stream.
- 2. What is the use of iostream header file?
- 3. Write about cin and cout statements.
- 4. List the features that can be used for formatting output.
- 5. What is the use of width()?
- 6. What is the purpose of precision()?
- 7. Write about fill().
- 8. What is the use of setf()?
- 9. What is the use of iomanip header file?
- 10. Define manipulator.
- 11. Define file.
- 12. Write about the kinds of data communication that is used for a program.
- 13. Differentiate input and output stream.
- 14. How to open files using a constructor?
- 15. How to detect end-of-file?
- 16. Write about file pointers.
- 17. List the functions supported by file stream classes.

- 18. Write about put() and get().
- 19. Write about write() and read().
- 20. How to update a file?
- 21. Write about error handling functions.
- 22. What is the use of argc?

FIVE MARKS:

- 1. Write about C++ streams.
- 2. What do you mean by C++ stream classes.
- 3. Explain overloaded operators.
- 4. Discuss about put() and get() functions.
- 5. How to define field width?
- 6. How to set precision for a number?
- 7. What is the use of filling and padding?
- 8. How to display trailing zeros?
- 9. How to design our own manipulators?
- 10. How to detect end-of-file?
- 11. Explain the file modes for open().
- 12. Write about functions for manipulators of file pointers.
- 13. How to specify an offset?
- 14. Write about put() and get() functions in sequential I/O operations.
- 15. Discuss about write() and read() functions.
- 16. How to read and write a class object?
- 17. How to handle errors during file operations?

TEN MARKS:

- 1. Explain the unformatted I/O operations in detail.
- 2. Describe the formatted console I/O operations in detail.
- 3. How to manage output with manipulators, explain.
- 4. Write in detail about the process of opening and closing a file.
- 5. Explain in detail about file pointers and their manipulators.
- 6. Describe about sequential I/O operations in detail.
- 7. How to update a file, explain.
- 8. Write about command line arguments in detail.

UNIT V

ONE MARKS:

- 1. What is the syntax of class template?
- a) template <paramaters> class declaration
- b) Template > class declaration
- c) temp <paramaters> class declaration
- d) Temp <paramaters> class declaration

2. What will be the output of the following C++ code? #include <iostream> #include <string>

```
#include <cstdlib>
using namespace std;
template<class T>
class A
{
 public:
         A(){
                   cout<<"Created\n";</pre>
         ~A(){
                   cout<<"Destroyed\n";</pre>
          }
};
int main(int argc, char const *argv[])
{
         A a;
         return 0;
}
a) Created
                                      b) Destroyed Created
Destroyed
c) Compile-time error
                                      d) Run-time error
3. What will be the output of the following C^{++} code?
#include <iostream>
#include <string>
#include <cstdlib>
using namespace std;
template<class T>
class A
{
  public:
         A(){
                   cout<<"Created\n";</pre>
         ~A(){
                   cout<<"Destroyed\n";</pre>
          }
};
int main(int argc, char const *argv[])
{
         A <int>a;
         return 0;
}
a) Created
                                             b) Destroyed
                                                Created
   Destroyed
```

```
c) Compile-time error
                                           d) Run-time error
4. What will be the output of the following C++ code?
#include <iostream>
#include <string>
#include <cstdlib>
using namespace std;
template<class T>
class A
{
  public:
         A(){
                  cout<<"Created\n";</pre>
         }
         ~A(){
                  cout<<"Destroyed\n";</pre>
         }
};
int main(int argc, char const *argv[])
{
         A <int>a1;
         A <char>a2;
         A <float>a3;
         return 0;
}
a)
Created
Destroyed
Created
Destroyed
Created
Destroyed
b)
Created
Created
Created
Destroyed
Destroyed
Destroyed
c)
Destroyed
Created
Destroyed
Created
Destroyed
Created
d)
Destroyed
Destroyed
```

```
Destroyed
Created
Created
Created
5. What will be the output of the following C++ code?
#include <iostream>
#include <string>
#include <cstdlib>
using namespace std;
template<class T>
class A
{
  public:
         T func(T a, T b){
                   return a/b;
          }
};
int main(int argc, char const *argv[])
{
         A \leq int\geqa1;
         cout << a1.func(3,2) << endl;
         cout<<a1.func(3.0,2.0)<<endl;
         return 0;
}
a) 1
  1
b) 1
  1.5
c) 1.5
  1
d) 1.5
  1.5
6. What will be the output of the following C^{++} code?
#include <iostream>
#include <string>
#include <cstdlib>
using namespace std;
template<class T>
class A
{
  public:
         T func(T a, T b){
                   return a/b;
          }
};
int main(int argc, char const *argv[])
```

A <float>a1; cout<<a1.func(3,2)<<endl; cout<<a1.func(3.0,2.0)<<endl; return 0; } a) 1 1 b) 1 1.5 c) 1.5 1 d) 1.5 1.5 7. What will be the output of the following C++ code? #include <iostream> #include <string> #include <cstdlib> using namespace std; template<class T> class A { public: $T \operatorname{func}(T a, T b)$ { return a/b; } }; int main(int argc, char const *argv[]) { A <char>a1; cout<<a1.func(65,1)<<endl; cout<<a1.func(65.28,1.1)<<endl; return 0; } a) A А b) 65 65 c) A 65 d) 65 А 8. What will be the output of the following C++ code? #include <iostream> #include <string> #include <cstdlib> using namespace std;

{

```
template<class T>
class A
{
         T a;
  public:
         A(){}
         ~A(){}
};
int main(int argc, char const *argv[])
{
         A <char>a1;
         A \leqint\geqa2;
         A <double>a3;
         cout<<sizeof(a1)<<endl;
         cout<<sizeof(a2)<<endl;
         cout<<sizeof(a3)<<endl;</pre>
         return 0;
}
a) 1
  4
  8
b) 4
  1
  8
c) 1
  1
  1
d) 4
  4
  4
9. How the template class is different from the normal class?
a) Template class generate objects of classes based on the template type
b) Template class saves system memory
c) Template class helps in making genetic classes
d) All of the mentioned
10. What will be the output of the following C++ code?
#include <iostream>
#include <string>
#include <cstdlib>
using namespace std;
template<class T, class U = char>
class A
{
         Ta;
```

```
U b;
public:
A(T a_val, char b_val = '$'){
```

```
this->a = a val;
                   this->b = b val;
          }
         void print(){
                   cout<<a<<' '<<b<<endl;
          }
};
int main(int argc, char const *argv[])
{
         A \leq int, int \geq a1(5,10);
         A <int> a2(5);
         A < float> a3(10.0);
         return 0;
}
a)
5 10
5 $
10 $
b) nothing
c) Error
d) Segmentation fault
11. What will be the output of the following C++ code?
#include <iostream>
#include <string>
#include <cstdlib>
using namespace std;
template<class T, class U = char>
class A
{
         Ta;
         Ub;
  public:
         A(T a val, char b val = '){
                   this->a = a_val;
                   this-b = b val;
          }
         void print(){
                   cout<<a<<' '<<b<<endl;
          }
};
int main(int argc, char const *argv[])
{
         A <int, int> a1(5,10);
         A <int> a2(5);
         A < float> a3(10.0);
         a1.print();
         a2.print();
```

	a3.print(); return 0;	
)	icium 0,	
}		
a)		
5 10		
5 \$		
10 \$		
b) Nothin	ng	
c) Error		
d) Segme	entation fault	

12. How many template parameters are allowed in template classes?

- a) 1 b) 2
- c) 3 d) one or more

TWO MARKS:

- 1. Define generic programming.
- 2. Define template.
- 3. Define template class.
- 4. Define template function.
- 5. How to overload template functions?
- 6. Why does a logical error occur?
- 7. Why does a syntactical error occur?
- 8. Define exception.
- 9. Write about synchronous exceptions.
- 10. Write about asynchronous exceptions.
- 11. What is the purpose of exception handling mechanism?
- 12. Write down the tasks performed by the error handling code.
- 13. What is the use of TRY keyword?
- 14. What is the use of THROW keyword?
- 15. What is the use of CATCH keyword?
- 16. What is the use of abort()?
- 17. Define throw point.
- 18. What is the use of rethrowing an exception?
- 19. How to restrict a function to throw only certain exceptions?

FIVE MARKS:

- 1. Explain class templates with multiple parameters.
- 2. Describe function templates with multiple parameters.
- 3. How to overload template functions?
- 4. Write about template member functions.
- 5. Explain about non-type template arguments.
- 6. Explain the throwing mechanism.
- 7. Why should we rethrow an exception?
- 8. Describe about specifying exceptions.

TEN MARKS:

- Explain in detail about class templates.
 Discuss function templates in detail.
- Elucidate exception handling mechanism in detail.
 Describe the catching mechanism in detail.

Data Structures and Algorithms

<u>UNIT I</u>

ONE MARKS:

1 is a way of organizing data th	at consider not only the items but also their relationship
to each other.	
a) data structure	b)algorithm
c)array	d)stack
2. An is a finite sequence of inst	ruction.
a) data structure	b)algorithm
c)array	d)stack
3. is a logical process of breaki	ng the problems into smaller parts.
a) Problem-solving	b)arrav
c)algorithm	d)data structure
4. There are basic steps for pro-	oblem solving.
a) 3	b) 4
c) 5	d) 6
5. The procedures for problem-solving ha	ive steps.
a) 3	b) 4
c) 5	d) 6
6. Read the statement of the problem by u	inder
a) keyword	b) variable
c) data type	d) header
7. The number of variables come along w	tith names of the
a) constant	b) array
c) variable	d) keyword
8. Standard symbol should be used for dr	awing a
a) circle	b) flow chart
c)shapes	d) diagram
9. The result of the program is compared	with manual calculation is known as
a) Test the problem	b) data validation
c) program development	d) Implementation
10. The user of the program may enter va	alues that are not expressed by the program is known as
a) Data validation	b) test the problem
c) program development	d) understanding the problem

11. process involves working from the most general form, down to the most specific form. b) bottom-up a) Top –down c) average d) none 12. Using the top-down approach ______ is the first focused on global aspects of the overall system. a) interaction b) attention c) integration d)feedback 13. Which system is decomposed into a subsystem and more consideration is given to specific issues. a) data process b)top-down process c) design process d) None of these 14. is the technique of breaking down a problem into various sub-tasks needed to be performed. b) top-down design a)Top-down approach d) bottom-up design c) bottom-up approach 15. is a program design technique that analyses a problem in terms of more elementary subtasks. a) top-down method b) bottom-up method d) None of these c) both a and b 16. In the top-down approach, the solution always proceeds from the level. a)low to high b) high to low d) high to high c) low to low 17. Top-down approach ______ the comprehension of the problem. a) Increased b) decreased c) remain the same d) None of the above 18. Top-down approach ______ the debugging time. a) increases b) reduces c) runs d) None of the these 19. Solving the parts of the problem individually is called a) problem-solving b) top-down approach c) bottom-up approach d)none 20. Joining each of the solutions together to form the complete solution is called a) top-down approach b)top –down design c) bottom-up design d)bottom-up approach 21. In top-down approach, unnecessary _____ level detail are removed. b) lower a)higher c)average d)None of these

22. By dividing the problem into a number of subproblems it is easy to share_____

a)Data validation c) program development	b) test the problemd) implementation
23. Each of the tasks is further broken downa) sub-tasksc) sub-functions	into separate b) subprogram d)all of the above
24. Each subtask is sufficiently simple to bea)programsc) algorithm	written as a self-contained module or b) data d)procedure
25 approach is breaking the big process with each problem.	gger problem into smaller ones and then repeat the
a) top-down c)top-design	b) bottom-up d)bottom design
26. must have one clearly understo	ood starting point and one or more clearly understood
a) program c) data	b) algorithm d)procedures
27. A set of instructions that describe the so or procedures for problem-solving	teps to be followed to carry out an activity is called
a) program c) algorithm	b) problem-solving d)procedures
28. If the algorithm is written in a langua instructions is called a	ge that the computer can understand such a set of
a) data c)procedures	b)algorithm d) program
29.An algorithm is an sequence a) ordered c)debugging	of well-define and effective operations. b)disordered d)testing
30. Fundamental characteristic of an algoritha) not effective and not well-definedc) developed algorithm	is that each operation must be bothb) effective and well-definedd) none
31. The process of developing an algorithma) algorithmc)trial and error	to solve a specific problem is a process b) testing d)solution
32 will lead to insertion, deletion, a)testing c)debug	or modification in the existing algorithm. b)trial d) error
33 is closely related to desired pra) algorithmc)program	b) data structure d) procedures

synonyms a) machine language b) algorithm language c) programming language d) high-level language 35 is a set of steps applied over assets of input to produce a set of output. a)program b)data c) algorithm d)data structure 36. The algorithm works in steps. a) divide & conquer b)backtrack c)randomized d) greedy 37. When the method is applied, it often leads to a large improvement in time complexity is called as	34 will not be having any	y rules of punctuations, spelling, vocabulary, or use of
a) machine language b) aportion language c) programming language d) high-level language 35 is a set of steps applied over assets of input to produce a set of output. a)program b)data c) algorithm d)data structure 36. Thealgorithm works in steps. a) divide & conquer b)backtrack c) randomized d) greedy 37. When the method is applied, it often leads to a large improvement in time complexity is called as	synonyms	h) alassithur languaga
c) programming language d) high-level language 35	a) machine language	b) algorithm language
35is a set of steps applied over assets of input to produce a set of output. a)programb)data a)programalgorithm d)data structure 36. Thealgorithm works in steps. a) divide & conquer b)backtrack c)randomized d) greedy 37. When the method is applied, it often leads to a large improvement in time complexity is called as ais	c) programming language	d) high-level language
a)program b)data c) algorithm b)data divide & conquer b)backtrack a) divide & conquer b)backtrack a) divide & conquer b)backtrack a) divide & conquer b) greedy 37. When the method is applied, it often leads to a large improvement in time complexity is called as a. a) divide & conquer c) randomized algorithm b) greedy algorithm c) randomized algorithm is an example of	35. is a set of steps applied	over assets of input to produce a set of output.
c) algorithm d)data structure 36. Thealgorithm works in steps. a) divide & conquer b) backtrack c) randomized d) greedy 37. When the method is applied, it often leads to a large improvement in time complexity is called asaldoide & conquer b) greedy algorithm a) divide & conquer b) greedy algorithm complexity is called asaldoited & d) backtrack algorithm c) randomized algorithm d) backtrack b) greedy algorithm a) divide & conquer d) None of the above 38. The shortest path of algorithm is an example of	a)program	b)data
36. Thealgorithm works in steps. a) divide & conquer b) backtrack a) divide & conquer b) greedy 37. When the method is applied, it often leads to a large improvement in time complexity is called as	c) algorithm	d)data structure
a) divide & conquer b) blacktrack c)randomized d) greedy 37. When the method is applied, it often leads to a large improvement in time complexity is called as a) a) a) divide & conquer b) greedy algorithm a) divide & conquer b) greedy algorithm c) randomized algorithm d)backtrack algorithm 38. The shortest path of algorithm is an example of	36. The algorithm works in s	steps.
c)randomized d) greedy 37. When the method is applied, it often leads to a large improvement in time complexity is called as a divide & conquer b) greedy algorithm a) divide & conquer b) greedy algorithm 38. The shortest path of algorithm is an example of	a) divide & conquer	b)backtrack
37. When the method is applied, it often leads to a large improvement in time complexity is called as ai	c)randomized	d) greedy
a) divide & conquer b) greedy algorithm c) randomized algorithm d)backtrack algorithm 38. The shortest path of algorithm is an example of	37. When the method is applied, it often	n leads to a large improvement in time complexity is called
a) unit at et complet b) greedy algorithm 38. The shortest path of algorithm is an example of	asa) divide & conquer	b) greedy algorithm
38. The shortest path of algorithm is an example of	c) randomized algorithm	d)backtrack algorithm
 38. The shortest path of algorithm is an example of		
 a) backtrack b) greedy algorithm c) divide & conquer d) None of the above 39.If a function calls itself, then it is called as	38. The shortest path of algorithm is an	example of
 c) divide & conquer d) None of the above 39. If a function calls itself, then it is called as	a) backtrack	b) greedy algorithm
 39.If a function calls itself, then it is called as	c) divide & conquer	d) None of the above
a)recursion b) indirect recursion c) direct recursion d)all of these 40.If a function calls another function ,then it is called as	39.If a function calls itself, then it is ca	alled as
c) direct recursion d)all of these 40.If a function calls another function ,then it is called as	a)recursion	b) indirect recursion
40.If a function calls another function ,then it is called as	c) direct recursion	d)all of these
a)non recursive recursion b) recursion a)non recursive recursion b) recursion 41. C programming language is an example of	40 If a function calls another function	then it is called as
 a) non-recursion 41. C programming language is an example of	a)non recursive recursion	b) recursion
 41. C programming language is an example of	c)direct recursion	d) indirect recursion
 41. C programming language is an example of		
 a) non-recursive algorithm b) randomized algorithm c) backtrack algorithm gives the different results with different data. a) greedy algorithm b) randomized algorithm c) backtrack algorithm d) divide & conquer 43. Game tree algorithm is an example of	41. C programming language is an example.	mple of
c)backtrack algorithm d) None of the above 42	a) non-recursive algorithm	b) randomized algorithm
 42 algorithm gives the different results with different data. a) greedy algorithm b) randomized algorithm c) backtrack algorithm is an example of 43. Game tree algorithm is an example of a) greedy algorithm b) randomized algorithm c) backtrack algorithm d) non-recursive algorithm 44 is a written by the set of logical instructions that manipulate the related data items. a) functions b) algorithm 45 of a program is the amount of main memory in a computer. a) Space complexity b) time complexity a) fracture of a program is the amount of main memory in a computer. 	c)backtrack algorithm	d) None of the above
 a) greedy algorithm b) randomized algorithm c) backtrack algorithm d) divide & conquer 43. Game tree algorithm is an example of	42. algorithm gives the diff	ferent results with different data.
 a) greedy algorithm b) randomized algorithm c) backtrack algorithm is an example of	a) greedy algorithm	b) randomized algorithm
 43. Game tree algorithm is an example of	c) backtrack algorithm	d)divide & conquer
 a) greedy algorithm b) randomized algorithm c) backtrack algorithm d) non-recursive algorithm d) non-recursive algorithm 44	43 Game tree algorithm is an example	e of
 a) greedy algorithm b) functionized algorithm d) non-recursive algorithm 44 is a written by the set of logical instructions that manipulate the related data items. a) functions b) algorithm c) information d) program 45 of a program is the amount of main memory in a computer. a) Space complexity b) time complexity c) frequency count d) 'o' notation 	a) greedy algorithm	b) randomized algorithm
 44 is a written by the set of logical instructions that manipulate the related data items. a) functions b) algorithm c) information d) program 45 of a program is the amount of main memory in a computer. a) Space complexity b) time complexity c) frequency count d) for mototion 	c) backtrack algorithm	d) non-recursive algorithm
45 of a program is the amount of main memory in a computer. a) Space complexity b) time complexity c) frequency count d) 'co' notation	44 is a written by the set ofa) functionsc)information	logical instructions that manipulate the related data items. b) algorithm d)program
a) Space complexity b) time complexity d) 'c' notation	45. of a program is the amo	unt of main memory in a computer.
a) fraguency count d) 'a' notation	a) Space complexity	b) time complexity
	c) frequency count	d) 'o' notation

46. In case we find the element of tin	ne data the end of the total time taken when searching
of elements fails.	b) worst asso
a) best case	b) worst-case
c) average case	d) o notation
47. The determination of time complexity of	f a given program is a
a) 'O' notation	b) algorithm
c) frequency count	d) space complexity
48. 0(n) is called as	
a)constant	b) notation
c)variable	d) linear
49.0(n log n) is faster than	
a) 0(n)	b) $0(n^2)$
c) 0(log n)	d)0(1)
50 Most of the algorithm behaves in	
50. Most of the algorithm behaves in	b) hast ange
a) worst case	d) none
c) worst-case	d) none
51.'O' notation is used to measure the perfo	rmance of any
a)program	b) constant
c) algorithm	d) variable
52. is used to define the order rot	ation of the growth for an algorithm.
a) frequency count	b) space complexity
c)time complexity	d) 'O' notation
53 verification should prece	de coding of the program
a) algorithm	b) data
c) information	d) program
54. Verification of the algorithm would cons	ist of determining the quality of the received.
a) input	b) output
c) control	d)process
55. The sets the basis for making n	necessary changes in the already designed algorithm
specification	
a)design	b) implementation
c) feedback	d) interface
56 . Algorithm is a kind of proof formulated	by looking at the specification for the
a) sub-tasks	b) sub-functions
c) information	d) subprograms
57. Algorithm specification combine proper	ly to accomplish the task of the algorithm
a)natural	b) whole
c)integer	d) quarter
, U	/ 1

58. Algorithm is a process of measuring the performance to the _____ with any laid of down standards.

a) data	b) task
c) program	d) processor
59.Implementation is the time to	code them into our language.
a) machine level	b) high-level
c) programming	d) C
60. Design the algorithm from	
a) bottom-up	b) top-up
c)bottom-down	d) top-down

61	of algorithm spells out comp	oletely and precisely for	or each task and	l subtask.
a)Implementat	ion	b) design		
c) problem solv	ing	d)information		

62. Which level of specification completes and precise the subprograms once?a) average levelb) down levelc)top-leveld) tackle level.

TWO MARKS:

- 1. List down the steps for solving a problem.
- 2. What is the top-down approach?
- 3. What is the bottom-up approach?
- 4. Define algorithm.
- 5. Define program.
- 6. What are the fundamental characteristics of an algorithm?
- 7. How to develop an algorithm?
- 8. Write down the characteristics of algorithmic language.
- 9. List down the common approaches for designing an algorithm.
- 10. What is meant by the implementation of an algorithm?
- 11. What is the verification of an algorithm?
- 12. Define space complexity.
- 13. Define time complexity.
- 14. Define frequency count.
- 15. Write about order notation.

FIVE MARKS:

- 1. Write down the advantages of the top-down approach.
- 2. How to design an algorithm.
- 3. Write down the criteria to judge down the algorithm.
- 4. Discuss time complexity.
- 5. Write down the algorithm for exchanging the value of two variables.
- 6. Explain the algorithm of the summation of a set of numbers.
- 7. Give the algorithm for organizing the numbers in order/sorting.
- 8. How to calculate the factorial of a number?

- 9. Give the algorithm for converting a decimal number to binary.
- 10. Write down the algorithm for the Fibonacci series.
- 11. How to reverse the order of elements of an array? Give algorithm.
- 12. Discuss the algorithm for finding the largest number in an array.

TEN MARKS:

- 1. Describe the procedure for problem-solving in detail.
- 2. Explain in detail the top-down and bottom-up approaches to algorithm design.
- 3. Elucidate the use of algorithms in problem-solving in detail.
- 4. Discuss in detail the design of algorithms.
- 5. Describe in detail the efficiency analysis of algorithms.

UNIT II

ONE MARKS:

1. is an finite, ordered collec	tion of homogeneous data elements.
a) Array	b) Stack
c) Queues	d) Variables
2. An array is finite because it contains a	number of elements.
a) Large	b) Limited
c) Small	d) Unlimited
3. The array is stored in a order.	
a) Variables	b) Queue
c) Linear	d) Stack
4.An array is known as	
a) Operation of data structure	b) Organization of data structure
c) Nonlinear data structure	d) Linear data structure
5. The number of elements in array is called	as
a) Size	b) Type
c) Base	d) Word
6. The size is also called as	
a) One dimension	b) Length of Dimension
c) Multi dimension	d) Two-dimension
7. The data structure is generally	type in all programming language
a) data type	b) fundamental data type
c) Built-in data type	d) Structured data type

8. of an array is the address of the memory location a) Size b) Type d) Base c) Word 9. An index is always an value a) Integer b) decimal c) fractional d) infinite 10. If only one subscript index is required to reference all the elements in an array then the array will be termed as a) Two-dimensional array b) One-dimensional array d) 'n' dimensional array c) Multi-dimensional array 11. operation is used to visiting all the elements in array. b) Searching a) Sorting c) Traversing d) Merging 12. operation is used to sorting the array in a specific order. b) Merging a) Searching d) Sorting c) Deleting 13. is used to search for an element to insert in an array. b) Inserting a) Searching d) Merging c) Deleting 14. operation is used to insert an element into an array provided that the array is not full. a) Sorting **b)** Inserting c) Deleting d) Traversing 15. operation is used to delete a particular element of an array a) Inserting b) Deletion c) Traversing d) Merging 16. operation is used to compact the elements from two different arrays into a single array. a) Sorting b) Traversing c) Merging d) Inserting 17. is the first element in the memory location b) p a) n d) m c) t

18 is used for to no map the	e logical presentation of an array to physical presentation.
a) Indexing formula	b) Sorting formula
c) Searching formula	d) Merging formula
19.Memory representation of an array	is very
a) hard	b) simple
c) soft	d) common
20 are the collection of h	omogeneous elements where the elements are ordered in a
number of rows and columns	
a) 3-D dimensional array	b) Multi-dimensional array
c) Two-dimensional array	d) One-dimensional array
21.Matrices are stored in	memory location
a) linear	b) Non-linear
c) Non- continuous	d) Continuous
22. There are two conventions of stor	ing any matrix in memory of major order
a) row and column	b) row by row
c) column by column	d) column and row
23.In row-major order, elements of a	matrix are stored on basic
a) column by column	b) row by row
c) column by row	d) row by column
24. In column-major order, elements of	of a matrix are stored on basic
a) column by row	b) row by row
c) column by column	d) row by column
25. Logically, a matrix appears as 2-d	imensional, but physically it is stored in a fashion
a) Major	b) Static
c) non-linear	d) linear
26. A stack is an ordered collection of operations take place at one	f homogeneous data elements where the and end only.
a) Insertion, Deletion	b) Top, Bottom
c) Item, Size	d) Push, Pop
27. The insertion operation is termed a	S
a) Pop	b) Push
c) Item	d) Index
28. The deletion operation is termed as	S
a) pop	b) push

c) size	d) index
29. The portion of the stack where these ope	erations are performed is known as
a) pop	b) top
c) push	d) item
30.An element in a stack is termed as	
a) Size	b) top
c) item	d) pop
31. The maximum number of elements that	a stack can accommodate is termed as
a) item	b) top
c) base	d) size
32.A stack is also a	
a) linear data structure	b) Nonlinear data structure
c) data structure	d) all of these
22 With $\frac{1}{2}$, $\frac{1}{2}$	
33. which is an example of the stack?	
a) train in a railway yard	b) Goods in an amigo
c) both a & b	a) None of these
34. Viewing top element from the stack is ca	lled as
a) push	b) create
c) pop	d) peep
35. Stack has how many ends?	
a) 1	b) 3
c) 2	d) 4
36. End of the stack is called	
a) PUSH	b) TOP
c) POP	d) ITEM
37. How many basic operations are required	to manipulate a stack?
a) one	b) two
c) three	d) four
38 is used to insert an item into a	stack.
a) Pop	b) Status
c) Top	d) Push
39. Pop is used to an item from a sta	ıck

a) remove	b) insert
c) copy	d) structure
40. is used to know the pr	resent state of a stack
a) pop	b) Status
c) push	d) item
41. In Push-Array points t	he location of the current top most item in a stack
a) item	b) size
c) top	d) down
42. In data structure an array A with	1 a top as
a) Stack	b) Queues
c) Array	d) pointer
43.Status-array has a stack with	element.
a) Array	b) Base
c) Size	d) item
44. A single linked list with the new	vly inserted node is known as
a) Double linked list	b)Push linked list
c) Circular linked list	d) Circular double linked list
45.In pop linked list top is pointer to	o the node
a) New	b) getnode
c) first	d) last
46.An data type is a data	structure
a) Derived	b) Built-in
c) Fundamental	d) Abstract
47.Data structure is a collection of	
a) Function and Procedure	b) Function and structure
c) Function and Abstract	d) Function and Array
48 is a useful total for sp	ecifying the data type
a) fundamental	b) abstract
c) derived	d) built-in
49. A is a collection of	f values and set of operations that can be performed on those
values	1) X/
a) Structure	b) variables
c) Data type	a) Constant
50. A ______ operations from a construct that can be implemented using a particular data structure

a) Arithmetic	b) Conditional
c) Mathematical	d) relational

51.An abstract data type can be defined as a _____

a) Array	b) linked list
c) Function	d) data type

52	_ are the examples for abstract data type.
a) Queues	b) Stacks
c) Array	d) linked list

53._____ is group of items n in which item is identified by its own identifiers.

b) Structure d) Function

a) Queues

c) Array

TWO MARKS:

- 1. What is meant by data?
- 2. What is an entity?
- 3. What is an attribute?
- 4. What is a domain?
- 5. Define information.
- 6. Differentiate data and information.
- 7. Define datatype.
- 8. What is a built-in datatype?
- 9. What is an abstract data type?
- 10. Define data structure.
- 11. Define axioms.
- 12. Define function.
- 13. What are the ways to implement data structure?
- 14. Define array.
- 15. Define base.
- 16. Define index.
- 17. Define word.
- 18. Define traversing.
- 19. What is a two-dimensional array?
- 20. Define sparse matrix.
- 21. Define stack.
- 22. Define expression.
- 23. Write about infix, prefix, and postfix.
- 24. Define recursion.

FIVE MARKS:

- 1. Write about built-in datatype.
- 2. Explain the classification of classic data structure.
- 3. Define array, explain its terminologies.
- 4. Discuss one-dimensional array.
- 5. How to represent 2D arrays?
- 6. Explain 2D and ND arrays.
- 7. Define stack and explain its terminologies.
- 8. Explain about memory representation of the stack.
- 9. How to evaluate postfix expression?

TEN MARKS:

- 1. Discuss operations of arrays.
- 2. Discuss the sparse matrix with its type.
- 3. Briefly discuss the operation of the stack.
- 4. How to convert infix expression to postfix expression $((D^*E)/F)$
- 5. Explain the conversion of postfix expression to a code.
- 6. Briefly explain the implementation of stack using recursion.
- 7. Explain the calculation of factorial using stack.

UNIT III

ONE MARKS:

- 1. How many stacks are needed to implement a queue consider situations where no other data structure like arrays, linked list is available to you.
 - a) 1 b) 2
 - c) 3 d) 4
- A priority queue can be efficiently implemented using which of the following data structure?
 a)array
 b)linked list

c)heap data structure like a binary heap, Fibonacci heap d)None of the above

- 3. A priority queue is implemented as a max-heap .initially ,it has 5 elements .the level-order :10,8,5,3,2 two new elements "1" and "7" are in sorted in the heap in that order .the level order traversal of the heap after the insertion of the elements is:

 a) 10,8,7,5,3,2,1
 b) 10,8,7,2,3,1,5
 c) 10,8,7,1,2,3,5
 d) 10,8,7,3,2,1,5
- 4. The minimum number of stacks needed to implement a queue is
 a)3 b)1
 c)2 d)4
- 5. Consider the following statements

	a)first in first out type b)implementing lists on 1 an array for almost all c)implementing queues on a linear array d)last in first out type which one is the following is correct?	
	1)b & c 3)c & d	2)a & b 4)b & d
6.	A data structure in which elements c the middle is?	an be inserted r deleted from both the ends, not in
	a) queue c) dequeue	b) circular queued) priority queue
7.	A normal queue if implemented usin a)rear=max-size-1 c)front=rear+1	g an array of size max-size gets full when b)front=(rear+1)mod max-size d)rear=front
8.	Queue serve major role ina)simulation of recursionheap sortd)simulation	b)simulation of arbitrary linked list c)simulation of of limited resource allocation
9.	Which of the following is not the type	be of queue?
	c)circular queue	d)priority queue
10.	The minimum number of queues req a)5 c)3	uired for priority queue implemented? b)4 d)2
11.	What data structure is used for the ba a)queue c)list	readth first traversal of a graph? b)stack d)None of the above
12.	A queue data structure can be used f	or .
	a)expression	b)recursion
	c)resource allocation	d)all of the above
13.	In a single link list, the link field of t	he node is null
	c)second	d)None of the above
14.	A linked list where the last node point	nts the header node is called
	a)single linked list c)circular linked list	b)multi-linked list d)None of the above
15.	have certain advantage o	ver ordinary linked lists.
	a)single link list	b)multi-link list d)all the above
16.	In an a member node is	s accessible from a particular node that is from
	header only. a) ordinarily linked list	b)double linked list
	c)circular linked list	d)double linked list

17.	7. In a, every member node is accessible from any node by merely chaining through the list	
	a) single linked list	h)double linked list
	a) single linked list	d)multi linked list
	c)circular inked list	d)multi-lifiked list
18.	An ordinary linked list is also known	n as linked list
	a)single	b)double
	c)multi	d)circular
19.	In one can chain through	left to right.
	a)double linked list	b)ordinary linked list
	c)multi-linked list	d)circular linked list
20.	In one can chain through th	e direction .
	a)circular linked list	b)ordinary linked list
	c)double linked list	d)all the above
21.	In data are stored in contigue	ous memory location
	a)array	b)stack
	c)linked list	d)all the above
22.	In it is a matter of only cha	nge memory locations.
	a)array	b)stack
	c)linked list	d)all the above
23.	is based on static memory l	ocation.
	a)array	b)stack
	c)linked list	d)all the above
24.	list used dynamic memory	location
	a)array	b)stack
	c)linked list	d)None of the above
25	if not managed carefully r	nay lead to serious errors in execution
23.	a)array	b)stack
	a)anay	d)None of the above
	c)pointers	d)None of the above
26.	In memory allocations are de	ecided during the run time as and when to require.
	a)array	b)linked list
	c)stack	d)all the above
27.	algorithm is used to sort the	elements store in a circular double linked list.
	a)merging	b)sorting
	c)deleting	d)traversing
28	was mentioned that linked	lists are the best solution to solve matrices
20.	a)snarse	b)nolynomial
	c)dynamic	d)COLI INK
	Cjuynanne	UJCOLLINIX

29.	The fields i and j store the and	d for a matrix element.
	a)row and column	b)row and row
	c)column and column	d)column and row
30.	Data field the matrix element	at the i row and j column aij
	a)deletes	b)merge
	c)sorts	d)stores
31.	points to the next node in the	same row.
	a)COLLINK	b)ROWLINK
	c)data field	d) new node
32.	points to the next node in the	same column.
	a)ROWLINK	b)COLLINK
	c)aij	d)data field
33.	representation is that it ca growing sizes.	an accommodate a number of polynomials of
	a)spares matrix	b)matrix
	c)polynomial	d)dynamic
2.4	T 1 1 1 1 1	
34.	In polynomial addition cases polynomials.	during the comparison between terms in two
	a)2 cases	b)3 cases
	c)4 cases	d)5 cases
35.	allows the users to alloca the execution of programs	te and de-allocate memory as per necessity during
	a)static storage management	b)dynamic storage management
	c)static and dynamic	d)de-allocation and allocation
36.	how to return a memory	block to the memory bank when it's not required
	a)allocation	b)de-allocation schemes
	c)allocation and de-allocation	d)static and dynamic
37.	De-allocation scheme are	strategies
	a)2	b)3
	c)1	d)4
38.	Allocation scheme are strate	egies
	a)2	b)3
	c)1	d)4
39.	is two way because one or right to left	can move in either direction, either from left to right
	a)single linked list	b)circular single linked list
	c)double linked list	d)circular double linked list.
40.	How many possible operations are th	ere in a doubly-linked list?
	a)7	b)6

c)5		d)4
41. A double A)node c)new noc	-linked list is enriched wit le	th a in the front containing data b)get node d)return node
42. a)X c)Y	_ is the data content of the	he node after which the new node is to be inserted b)KEY d)NULL
43.	is a node from a double li	nked list that may take place from any position in the
list	_	h) and in a
a) inserting	5	d) deleting
c)copying		a)deleting
44	_ linked list known to the	best of its kind
a)single		b)double
c)circular	· double	d)singular double
45	is the data content of	the node to be inserted
a)KEY		b)X
c)Y		d)NULL
46. The advar list structu	ntage of both double and c are are called	ircular linked list are incorporate in another type of
a)single li	nk list	b)double link list

d)circular double link list.

c)circular linked list

TWO MARKS:

- 1. Define queue.
- 2. Define enqueue.
- 3. Define dequeue.
- 4. Define circular queue.
- What is simulation? 5.
- What are the types of simulation models? 6.
- What are the uses of the round-robin algorithm? 7.
- 8. Define linked list.
- 9. Define single linked list.
- 10. Define double linked list.
- 11. Define circular linked list.
- 12. What is ROWLINK?
- 13. What is COLUMNLINK?
- 14. What is a sparse matrix?
- 15. Diagrammatically represent the linked list structure for polynomial operation.16. What is meant by static storage management?

- 17. What is meant by dynamic storage management?18. What are the allocation strategies used in memory management?
- 19. What are the deallocation strategies used in memory management?

FIVE MARKS:

- 1. How to represent queue in memory using array?
- 2. How to represent queue using linked list?
- 3. Explain the double-ended queue.
- 4. Explain the CPU scheduling in a multi-programming environment.
- 5. Briefly discuss the round-robin algorithm.
- 6. Discuss linked list representations.
- 7. Explain about null link problem in the circular linked list.

TEN MARKS:

- 1. Explain about circular queue with enqueue and dequeue operation.
- 2. Briefly explain about priority queue.
- 3. Explain about simulation technique in detail.
- 4. Describe the operations on single linked list.
- 5. Elucidate the operations on the double-linked list.
- 6. Discuss the operations of a circular linked list.
- 7. Briefly explain the sparse matrix multiplication using a linked list.
- 8. How is the polynomial addition and multiplication done with the help of a linked list?
- 9. Explain dynamic storage management.

UNIT IV

ONE MARKS:

1. What is the maximum number of children that a binary tree node can have?

a) 0 b) 1 c) 2 d) 3

c) 2

2. The following given tree is an example of _____



a) Binary tree

c) Fibonacci series

b) Binary search treed) AVL tree

3. A binary tree is a rooted tree but not an ordered tree whether it is true or false?
a) true
b) false
c)both false
d) both true

b) 1

4. Which traversal strategy is used in the binary tree?

a) depth-first traversal	b) random traversal
c) priority traversal	d) breadth-first traversal

5. How many types of insertion are performed in a binary tree?

a) 2

- 6. How many common operations are performed in a binary tree
- a) 1 **b)** 3 d) 4
- c) 2
- 7. What operation does the following diagram depict?



a) Inserting a leaf node c) deleting a node with 0 b) Inserting an internal node

8. General ordered tree can be encoded into binary tree whether it is true or false?

a) true	b) false
c) both true	d) neither true nor false

9. How many bits would a sufficient binary tree occupy? a) n+0(n) b) 2n+o(n)d) n c)n/2

10. The average depth of a binary tree is	given as
a)0(N)	b) 0(1)
c) 0(log N)	$d)0(N^2)$

11. How many orders of traversal apply to a binary tree? a) 1 b) 2 d) 3 c) 4

12. If binary trees are represented in arrays, what formula can be used to locate a left child, if the node has an index i?

a) 2i+2	b) 2i+1
c) 4i	d) 2i+1

13. Using which formula can a parent node be located in an array? a)(i+1)/2b)i/2 d) 2i/2 c)(i-1)/2

14. What are the worst case and the average case complexities of a binary search tree? a) 0(n).0(n)b) $0(\log n), 0(\log n)$ d) 0(n),o(log n) c) $0(\log n), 0(n)$

15. What is the worst-case time complexity of the search, insert & delete operation in the general binary search tree? a) 0(n)for all b) 0(log n)for all c) 0(log n)for search d) $O(\log n)$ for search and insert 16. operation is used to visit each node in the tree exactly once. a) Insertion b) traversal c) deletion d) merging 17. A full on a binary tree gives the linear ordering of the data in the tree. a) deletion b) merging c)traversal d) insertion 18. The traversing of a tree is performed in different ways. a) two b) one c) four d) three 19. The root is finished first in the _____ traversal. b) post order a) pre order c) in order d) none of the above 20. Before visiting the root node, the left sub-tree of the root node is visited in traversal. a) pre order b)in order c) post order d) all of the above 21. The root node is visited at the end of ______ traversal. b)in order a) pre order d) all of the above c) post order 22. operation applies to trees that are represented using a linked list structure a) traversal b) insertion c) deletion d) merging 23. Before performing _____, we have to test for compatibility. a) merging b) deletion c) insertion d) traversal 24.T(n_1+n_2)= a) $T_1n_1+T_2n_2$ b) $T_1(n_1)+T_2(n_2)$ c) $n_1(T_1) + (T_2)n_2T_1$ d) $n_1(T_1) + n_2(T_2)$ 25. If the traversal is given then the first node is the root node. a) pre-order b) post order c) in order d) all of the above 26. If the traversal is given then the last node is the root node. b) post order a) pre order d) all of the above c) in order

27. Once the node is identified all the	nodes in the left subtrees and the right subtrees of
the root node can be identified.	
a) first	b) second
c) middle	d) last
28. Once the node is identified all the	he nodes of the left subtree and right subtrees can be
identified.	
a) first	b) second
c)root	d) middle
29. There are types of binary trees po	ssible each with its property.
a) three	b) two
c) one	d) several
30. An tree is a binary tree that store	es an arithmetic expression
a) expression	b) binary search tree
c) heap	d)Huffman
31. The leaves of an tree are operation	nds such as constant or variable names
a) arithmetic expression	b) expression
c) binary tree	d) heap tree
32. A binary tree must represent a	relationship between a node.
a) branch	b)root
c)hierarchical	d) structure
33. The size of the three is restricted as perm	nitted by the
a) Search	b) node
c) structure	d) memory
34. The root node is stored in the	memory location.
a) first	b) second
c) third	d) last
35. The maximum and minimum size of an a general as	array required to store a binary tree can express in
a) size $1^n - 1$	b) size 2^{n-1}
c) size 3 ⁿ -1	d) size 2^n-2
36. Any mode can be accessed from any oth from execution of view.	er node by calculating the index and this is efficient
a) node	b) search
c) point	d) memory
37. Only data are stored with any to implicitly.	their successor or ancestor which are mentioned
a) array	b) trees
c) search	d) pointers

38. The linear representation of binary trees has a _____ of overheads.

a) Trees c) structure	b) memory d) numbers
39.In a red black tree the root node is co	lored
a) black	b)red
c) white	d)pink
40. Children of every red –colored node	are
a)red	b) black
c) red or black	d) None of these
41 is to insert a new node.	
a) Deletion	b) Insertion
c) traversing	d) merging
42 is to find an element	1 \ Y
a) Merging	b) Insertion
c) Searching	d) Deleting
43 is to remove an existing node	1) N.C.
a) Searching	b) Merging
c) Insertion	a) Deleting
44. The Red-black tree is empty ,then this	s case is called a
a) trivial case	b) Non-trivial case
c) best case	d) worst case
45. The insertion leads to the problem call	
a)Double-black problem	b) Double-red problem
c) red-black problem	d) single black problem
46. The node has black children as	s external nodes.
	b) 3
c) 4	d) 2
47.All the external nodes are coloured wi	th
a) Black	b) red
c) white	d) red and black
48 is a item that a node stores.	
a)Parent	B) Data
c) LC, RC	d) Structures
49. A tree is a representation	of a data
a) binary	b)linear
c) non-linear	d) linked
50.Tree has basic terminology	
a) 5	b) 6
c) 8	d) 10

51. A of tree stores the actual da	ta and links to another node.
c) root	d) leaf
52. is a pointer to a node in a tree	
a) array	b) link
c) tree	d) binary
53. has no parent	
a)leaf	b) parent
c) root	d) pointer
54. A is a finite set of one or more nodes	
a) binary	b) root
c) linear	d) tree
55. A is a special form of a tree.	
a) binary tree	b) heap tree
c) linear	d) non –linear
56. Two specials features of a binary tree are	e
a) full binary tree	b)full and combined binary tree
c) complete and full binary tree	d) combined and full binary tree
57. A is a binary tree that contains	the maximum possible number of nodes.
a)complete binary tree	b) full binary tree
c) binary tree	d) heap tree.
58. A is a binary tree which conta	ins all its levels full but the last level is empty.
a)full binary tree	b) half binary tree
c)complete binary tree	d) binary tree

TWO MARKS:

- 1. Define tree.
- 2. Define node.
- Define parent node.
 Define child node.
- 5. What is a link?
- 6. What is a root?
- 7. What is a leaf?
- 8. Define level.

- 9. Define height.
 10. Define degree.
 11. Define sibling.
 12. Define binary tree.
- 13. Define full binary tree.
 14. Define complete binary tree.

- 15. Define expression tree.
- 16. What is meant by binary search time?
- 17. Define heap tree.
- 18. Define red-black tree.
- 19. Define graph.
- 20. Define digraph.
- 21. Define weighted graph.
- 22. What is a self-loop?
- 23. What are parallel edges?
- 24. Define a simple graph.
- 25. Define complete graph.
- 26. Define acyclic graph.
- 27. Define isolated vertex.
- 28. What is the degree of a vertex?
- 29. What is a pendant vertex?
- 30. What is a connected graph?
- 31. Differentiate strongly connected and weakly connected graphs.
- 32. Define BFS.
- 33. Define DFS.

FIVE MARKS:

- 1. Discuss the basic terminologies used in trees.
- 2. Explain the properties of a binary tree.
- 3. Explain the linear representation of a binary tree.
- 4. Explain the linked representation of a binary tree.
- 5. Write down the advantages and disadvantages of sequential representation of a binary tree.
- 6. Briefly explain the terminologies used in graphs.
- 7. Explain the comparison among various memory representations of the graph.
- 8. Explain about BFS and DFS.
- 9. Explain the shortest path problem using warshall's algorithm.
- 10. Describe the shortest path problem using Floyd's algorithm.

TEN MARKS:

- 1. Explain the representation of a binary tree.
- 2. Describe the operations on a binary tree.
- 3. Discuss the expression tree with its operations.
- 4. Explain about binary search tree with its operations.
- 5. Describe heap tree with its operations.
- 6. Discuss red-black tree with its operations.
- 7. How to represent graphs in memory, explain.
- 8. Explain the operations on graphs using a linked list.
- 9. Describe operations on graphs using matrix representation.
- 10. Explain the shortest path problem using Dijkstra's algorithm.
- 11. Describe topological sorting.
- 12. Discuss minimum spanning tree.
- 13. How to find the minimum spanning tree of a graph using Kruskal's algorithm?
- 14. How to find the minimum spanning tree of a graph using prim's algorithm?

UNIT V

ONE MARKS:

1. is known as fundamenta	I operation in computer science.
a) Sorting	b) searching
c) merging	d) deleting
2is the element to search a spe	ccial record.
a) File	b) key
c) database	d) item
3is same as the key under	search.
a) Key	b) item
c) table	d) file
4. The collection of all records is called a	
a) File	b) key
c) table	d) item
5. is used to indicate a very large	e table.
a) File	b) key
c) item	d) table
,	,
6. A large file or group of files is/are called	a
a) File	b) database
c) item	d) table
7. A search will be termed	_ if the key is found.
a) Successful	b) unsuccessful
c) file	d) table
8. There are important linear sea	arch techniques.
a) 5	b) 4
c) 3	d) 2
9. The linear search methods when elements	s are in order.
a) Ascending	b) descending
c) basic	d) None of these
10. An algorithm for linear search method v	vith ordered elements stored in an
a) Elements	b) array
c) search	d) all of the above
11. 1 and u are the known lower and upper i	ndices of the
a) Array	b) terminologies
c) data structure	d) None of these
12. We consider a binary tree in the form of	f

a) Inserting	b) tree
	d) binary tice
13. Each node has an	
a) Value	b) element
c) variable	d) number
14. There are ways to traversal can	be done
a) 6	b) 12
c) 27	d)3
15. Pre order tree traversal is presented in the	he form of an algorithm .
a) Binary tree search	b) binary insertion
c) tree sort	d) binary search
17. Binary search tree is also called	
a) Binary tree	b) binary sorted tree
c) sorted tree	d) binary tree searching
18. If the value of n is greater than any valu	e in the left sub-tree and less than any value in the
right sub-tree, is called .	
a) Binary search tree	b) binary tree search
c) heap tree	d) merge sort
19. In binary search tree, the searching open	ration begins at the
a) Left node	b) right node
c) root node	d) leaf node
20. When a set of data to be stored is small	enough such that the entire sorting can be performed
in a computer's internal storage, then the sort	rting is called
a) Internal sort	b) external sort
c) merge sort	d) insertion sort
21 Sorting of a large set of data which is s	tored in low and speed computer's external memory
is called .	tored in low and speed computer's external memory
a) Internal sort	b) external sort
c) merge sort	d) insertion sort
22 An arrangement of data is called in	if it actisfies the flass then an equal
22. All all all generit of data is called in	
a) Asconding order	b) descending order
a) Ascenting order	levicographic order
c) decreasing order	lexicographic order
23. An arrangement of data is said to be in	if it satisfies "greater than or equal
to" relation between any two consecutive da	ta.
a) Increasing order	b) decreasing order
c) ascending order	d) lexicographic order.

24. If the data are in the form of characters, or string of characters and are arranged in the same order as in the dictionary, then it is called ______.

c) lexicographer order	d) descending order
25 is an ord	lering for a set of characters that determines whether a
character is higher, lower or same	order compared to another.
a) Ascending order	b) descending order
c) collating sequence	d) random order
26. If the data in a list do not follow order.	w any order, then we say that the list is arranged in
a) Random order	b) lexicographic order
c) collating sequence	d) swap
27 implies the in	terchange of their contents.
a) Random order	b) swap
c) collating sequence	d) lexicographer order
28. If a sorting method maintains t	he same relative position of their occurrences in the sorted list,
then it is called	·
a) Random	b) swap
c) stable sort	d) place order
29 is one of t	he memory-efficient methods.
a) Random	b) swap
c) stable sort	d) place sort
30. An is a d	ata or element is the list to be sorted.
a) Root	b) ptr
c) item	d) sort
31. An is also ter	rmed as key, data, element, etc.
a) Item	b) ptr
c) root	d) node
32. In, all ite	ems to be stored are kept entirely in the computer's main
memory.	
a) Internal storage	b) external storage
c) sorting	d) None of these
33 deals with a	large number of items, which cannot be held comfortably in
the main memory.	
a) Internal storage	b) external storage
c) sorting	d) None of these
34. Insertion sorting is based on th	e method.
a) External sorting	b) sorting
c) bridge player	d) internal storage
35. The straight insertion sort is li	kely referred to as

36. In sort, to insert a not	de, allocation of memory is inserted.	
a) Insertion	b) straight insertion	
c) binary insertion	d) line insertion	
37 Sort is known to reduce th	e number of comparisons	
a) Binary insertion	b) insertion sort	
c) merge sort	d) tree sort	
c) merge sort	u) nee son	
38 Sort performs better than	the straight insertion sort if less number of	
comparisons is involved.		
a) Tree sort	b) binary insertion	
c) two-way insertion	d) merge sort	
39. In insertion sort, there is	a variation of basic principles that are possible	e.
a) Four	b)Three	
c) five	d) two	
40 is the simplest sorti	ng technique among all the sorting techniques	
known.	ig cooming to among an one coronig cooming too	
a) Bubble sort	b) quick sort	
c) selection sort	d) merge sort	
	d) herge soft	
41. The bubble sort devices its name from the	he fact that the smaller data items to the top of t	he
list.		
a) Bubble	b) bubble up	
c) bubble down	d)bubble sort	
42. In bubble sort all the elements are sorted	in order.	
a) Sorted	b) descending	
c) ascending	d) arranged	
43. The present version of the bubble sort al	gorithm requires comparisons	to
sort elements in the list.		
a) n-1	b) n	
c) n(n-1)	d) n(n-1)/2	
44. Selection sort has types		
a) Three	b) two	
c) one	d) none	
45. Selection sort has ba	asic operations.	
a) Four	b) three	
c) two	d) one	
46. is used to find the	smallest element in the list between i and n.	
a) Select sort	b) select mini	
c) select swap	d) all of these	
47. In swap x and y should be passed as		

a) Arrays c) pointers	b) index d) size
48. Another type of selection sort is calleda) Straight selectionc) sort selection	d as b) tree selection d) heap selection
 49. In bubble sort, if there are n elements a) S(n) c) s(n)=1 	<pre>in the input list, then the additional storage space. b) s(n)=0 d) s(n)=n</pre>
50. All sorting methods based on merginga) Twoc) four	g can be divided into categories. b) three d) five
51.The algorithm merge sort is defineda) Non-recursivelyc) randomly	b) recursively d) non-randomly
52. It divides the large problem into a nura) Conquerc) combine	mber of smaller sub-problems. b) divide d) confusion
53 is combine the result solution.a) Dividec) conquer	 b) combine d) construct
54. The algorithm quicksort is defineda) Non-recursivelyc) non-randomly	b) randomly d) recursively
55. The quicksort is developed by C.A.R.a) 1962c)1862	Hoare in b) 1963 d) 1863
56. The is used to solvea) Dividec) combine	e a problem quickly. b) conquer d) construct
57. On which algorithm is heap sort baseda) Fibonacci heapc) priority queue	d? b) binary tree d) FIFO
 58. At what time can a binary heap be but a) 0(N) c) 0(log N) 	ilt? b) 0(N log N) d) 0(N ²)
60. In what position does the array for here a) 0	ap sort contains data? b) 1

c) -1	d) anywhere in the array	
61. In heap sort, after deleting the last minina) Increasing sorting orderc) tree in order	b) decreasing sorting orderd) tree preorder	
62. what is the typical running time of a heata) 0(N)c) 0(log N)	p sort algorithm? b) 0(N log N) d) 0(N ²)	
63. How many arrays are required to performa) 1c) 3	 b) 2 d) 4 	
64. What is the time taken to perform a deleta) 0(N)c) 0(log N)	te min operation? b) 0(N log N) d) 0(N ²)	
65. Heap sort is faster than shell sort.a) True	b) false	
 66. What is the average number of comparis district items? a) 2N logN-0(N) c) 2N logN-0(log N) 	ons used to heap sort a random permutation of N b) 2N log N-0(N logN) d) 2N log N-0(log N)	
67. Heap sort is an implementation ofa) insertion sortc)bubble sort	using a descending priority queue. b) selection sort d) merge sort	
 68. which one of the following is false? a) Heapsort is an in-place algorithm b) Heap sort has 0(n logn) average-case time complexity c) Heapsort is a stable sort. d) Heapsort is a comparison-based sorting algorithm. 		
 70. The descending heap property is a) A[parent(i)]=A[i] c) A[parent(i)>2*A[i] 	b) A[parent(i)]<=A[i] d) A[parent(i)]>=A[i]	
 71. what is its worst-case time complexity o a) 0(n logn) c) 0(n²) 	f heap sort? b) $0(n^2 \log n)$ d) $0(n^3)$	
TWO MARKS:		
1 Define searching		

- Define searching.
 Define internal searching.
 Define external searching.
 What is a key?

- 5. What is an item?
- 6. What is a table?
- 7. Define file.
- 8. Define database.
- 9. Define linear search.
- 10. Define non-linear search.
- 11. Define binary search.
- 12. Define decision tree.
- 13. What is the best case?
- 14. What is the worst case?
- 15. What is the average case?
- 16. Define sorting.
- 17. What is a lexicographic order?
- 18. What is collating sequence?
- 19. What is a random order?
- 20. What is swapping?
- 21. What is stable sort?
- 22. What is inplace sort?
- 23. What is insertion?
- 24. Define hashing.
- 25. Define heap sort.
- 26. Define heap tree.
- 27. Define min-heap.
- 28. Define max heap.
- 29. Define quick sort.
- 30. Define bubble sort.
- 31. Define merge sort.
- 32. What is the internal merge sort?
- 33. What is the external merge sort?

FIVE MARKS:

- 1. Explain searching with its searching methods.
- 2. Explain linear search with array representation.
- 3. Describe the linear search with a linked list.
- 4. Discuss linear search with an ordered list.
- 5. Explain binary search.
- 6. Write about binary tree sorting.
- 7. Describe binary search tree sorting.
- 8. Discuss straight insertion sort.
- 9. Explain binary insertion sort.
- 10. Describe two-way insertion sort.
- 11. Discuss list insertion sort.
- 12. Explain heap sort with an algorithm.
- 13. Explain about sorting using heap tree.
- 14. Describe the divide and conquer strategy.

TEN MARKS:

1. Briefly explain binary search with an algorithm.

- Explain non-linear searching with its techniques.
 Elucidate the classification of sorting techniques.
- 4. Write in detail about sorting by insertion.
- 5. Explain sorting by selection.
- 6. Describe bubble sort with an algorithm.
- 7. Explain quick sort with its algorithm.
- 8. Discuss merge sort with its algorithm.

Dot Net Programming

<u>UNIT I, II, III</u>

ONE MARKS:

1.The execution of applications created by ua) Internetc) Hardware	sing various programming languages. b) Windows d) language
2. What is CLR?a) Common language runtimeC. Compiler library runtime	b) Compiler language runtime D. Common library runtime
3. Which is the following is not a componenta) Class loaderc) .NET Framework	t of the CLR? b) Garbage collector d) JIT Compiler
4. Which of the following provides automatimemory leaks and invalid memory referencea) Security enginec) JIT compiler	ic memory management and resolves the issue of es b) Garbage collector d) Debugger
5. What is CTS?a) Common type specificationc) Compiler type structure	b) Common type-safed) Common type system
6.What is CLS?a) Compiler library specificationc) Compiler language specification	b) Common library specificationd) Common language specification
7.What is DLL?a) Dynamic-link languagec) Dynamic-link library	b) Direct link languaged) Direct link library
8. Which of the following namespace provid application step by step?a) Systemc) System.Object	 es the classes that allow you to debug your b) System.Diagnostics d) System.Security
9. What is GAC?a) Garbage collectorc) Global access cache	b) Global assembly collectord) Global assembly cache
10. What is COM?a) Component object modelc) Computer oriented model	b) Common object modeld) Common oriented model

11. A is a collection of sol	tware libraries/components which provides a defined
application programming interface (API)	
a) Framework	b) IDE
c) Program	d) software
12.The is a software develop	ment platform which provides a runtime defines
functionality in some libraries, and supports	s a set of programming language.
a) Dot net framework	b) IDE
c) Program	d) software
13. This framework contains a large numbe	r of class libraries known as
a) Framework Class Library (FCL)	b) CLR
c) CLS	d) All of above
14. The software programs written in .NET called	are executed in the execution environment, which is
a) CLR (Common Language Runtime)	b) Dot net framework
c) IDE	d) CLS
15. Functions of the CLR.	
a) It converts the program into native code.	b) Handles Exceptions
c) Provides type-safety	d) All of above
16. It includes all common datatypes, string	values, arrays and methods for data conversion.
a) System	b) System.Data
c) System.Diagnostics	d) System.Net,
17. These are used to access a database, per	form commands on a database and retrieve database.
a) System	b) System.Data
c) System.Diagnostics	d) System.Net
18. These are used to access, read and write	files.
a) System.IO	b) System.DirectoryServices
c) System.IO.IsolatedStorage	d) All of above
19. These are used to communicate over the	Internet when creating peer-to-peer applications.
a) System.Net	b) System.Net.Sockets
c) Both A and B	d) None of these
20. These namespaces are used to create Wi	indows-based applications using Windows user
a) System Windows Forms	h) System Windows Forms Design
c) Both A and B	d) None of these
c) both A and b	d) None of these
21.NET is a software framework which is d	esigned and developed by
a) IBM	d) None of above
22. Framework Class Library(FCL) is also	called the
a) Assemblies	o) rackages

c) header files

d) None of these

23. when we wanted to remove the unwanted resources from the code which is no longer in use can be done by the

a) garbage collector	b) Assemblies
c) FCL	d) None of these
24. CLR stands for	
a) Common Local Runtime	b) Common Language Runtime
c) Common Language Realtime	d) Common Local Realtime
	,
25. CLR is responsible for .	
a) Garbage Collection	b) Code Access Security
c) Code Verification	d) All of the above
,	,
26. GAC stands for .	
a) Global Assembly Cache	b) Global Assembly Store
c) Garbage Assemble Cache	d) Global Advanced Cache
-)	
27. This is the final layer in .Net which wou	ld be used to run a .net program developed in any
programming language. So the subsequent c	compiler will send the program to the CLI layer to
run the Net application	empirer win sena the program to the ODI myer to
a) Common I anguage Interpreter	h) Common language Runtime
c) Common language specification	d) None of these
c) common language specification	d) None of these
28 combines the features of	f the text hav and list hav
a) Picture box	b) Check box
a) Comba hay	d) Ontion button
c) Combo box	d) Option button
20 control is used to provide a	n identificable anovaine for other controls
29 control is used to provide as	1) I 1 1
a) Frame	b) Label
c) List box	d) Command button
30. Full name of CLI is	
a) Common Language Independence	b) Common Language Intermediate
c) Common Library Infrastructure	d) Common Language Infrastructure
31. A GUI	
a) uses buttons, menus, and icons.	b) should be easy for a user to manipulate
c) stands for Graphic Use Interaction	d) Both a and b.
32. Visual Studio.NET provides which featu	ire:
a) debugging	b) application deployment
c) syntax checking	d) All of the above
33. What is the full form of IDE?	
a) Integrated Development Environment	b) Integrated Design Environment
c) Interior Development Environment	d) Interior Design Environment
-	-

34. Which one is not the characteristics of Visual Basic.Net?

a) User Interface Design b) Rapid Application Development c) Object Oriented Programming d) Designer window is not the core part of Visual Studio IDE. 35. a) Solution Explorer b) Tool box d) Designer Window c) Start Menu 36. How many steps are used to develop any software in IDE? a) 4 b) 5 c) 6 d) 3 37. Which one is not the property of Common Control Class? a) show b) Back Color c) Font d) Fore Color 38. The Tick event is found only in which object? a)Form b) Button c) Text Box d) Timer 39. How many types of Projects in .Net? a) 4 b) 5 c) 6 d) 7 40. In event-driven programming an event is generated by: a) the system b) a user's action c) the program itself d) All of the above 41. Which one is a numeric data type? a) Floating point b) Integer d) Both a and b c) Boolean 42. MOD is operator in VB.Net a) Assignment b) Logical c) Arithmetic d) Comparison 43. How many types of operators used in VB.Net? a) 2 b) 3 c) 4 d) 5 44. Which of the following converts the expression to Char data type in VB.NET? b) CByte(expression) a) CBool(expression) c) CChar(expression) d) CDate(expression) 45. Which of the following converts the expression to Date data type in VB.NET? a) CBool(expression) b) CByte(expression) d) CDate(expression) c) CChar(expression) 46. How many sizes of character in variable name? a) 256 b) 255 d) 200 c) 300

47. How many types of String Data Type? a) 1 b) 2 c) 3 d) 4 48. Which character is used to store date or time in date data type? a) * b) \$ **c)** # d) {} 49. What is the syntax of Dynamic Array? a) Dim Array name (new size) b) Redim Array name (new size) c) Dim Array name (size) d) Redim Array name (size) 50. How many types of arrays? a) 2 **b)** 4 c) 3 d) 5 51. How many types of buttons are used in Msgboxstyle? a) 3 b) 4 c) 5 d) 6 52. Maximum number of buttons in message boxa) 1 **b)** 3 c) 2 d) 4 53. What is the property of Delete in VB.Net? a).Delete b) .Remove At c) .Delete At d).Remove 54. Which one of the following is correct? a) int a=16, a>>2 = 4 b) int b=-8, b>>1 = -4 c) int a=16, a>>> 2= 4 d) All of the Above 55. Which of the following is an 8-byte integer? a) Char b) Long c) Short d) Byte 56. Which of the following in not an integer? b) Byte a) Char d) Long c) Integer 57. Which on is not a valid variable name? a) myName b) my.name d) MYNAME c) my-name 58. Which data type is used for 'City name'? a) Integer b) Boolean c) Floating Point d) String

59. Which bracket is used for declaring Array in VB.Net?

a) () c) { }	b) [] d) All
60. How many categories in Toolbox of VB a) 9 c) 6	Net? b) 10 d) 8
61. Which of the following Common Methoa) Show()c) Remove ()	d used in Textbox? b) Hide () d) Focus ()
62. Which Control is used for display messaa) Text boxc) List View	b) Labeld) Display Message
63. Standard Prefix for Textbox is a) txt c) tx	b) text d) txtb
64. Which method is not used in Items Colle a) Add c) Count	ection in Listbox? b) Clear d) Delete
65. Which of the following provides quick a programming environment ?a) Toolboxc) Toolbar	b) Object browser d) None of these
66 control is used to provide an a) Frame c) List box	identifiable grouping for other controls. b) Label d) Command button
67 combines the features of th a) Picture box c) Combo box	e text box and list box. b) Check box d) Option button
68. By default, the textbox control can holda) Multiple linesc) Password character	text as b) Single line d) None of these
69. A displays a list of items a) Combo box c) Check box	from which user can select one or more items. b) List box d) Scroll bar
70. How many Menus in VB.Net? a) 10 c) 11	b) 7 d) 8
71 is a collection of files. a) Class	b) Group

c) Project	d) Form	
72. Visual Basic maintains a project to file v	vith the extension	
a) frm	b) vbp	
c) .vbs	d) .cls	
73 indicates whether a particu	alar condition is on or off.	
a) Combo Box	b) List Box	
c) Check Box	d) None of these	
74. In GUI, is a means of sele	ecting one of several options.	
a) Option Button	b) Scroll Bar	
c) List Box	d) Combo Box	
75 control is used to repres	sent the items in a hierarchical manner.	
a) Tree View	b) Grid View	
c) Progress Bar	d) None of these	
76. How many Dialogs in Dialog Category of	of tool box?	
a) 3	b) 5	
c) 7	d) 4	
77. Which of the following Control is also c	alled Looping Control?	
a) Scroll Bar	b) Timer	
c) List View	d) Check Box	
78. Shortcut Key is to open Code Designer V a) Ctrl+F7	Window- b) F7	
c) F5	d) Shift+F7	
79. Shortcut Key is to open Project Dialog E	Box-	
a) Ctrl + O	b) Ctrl + N	
c) Ctrl + P	d) Ctrl + A	
80. Which operator is used to check Inequality?		
a) ><	b) ==	
c) <>	d) >=<	
81. Expand OOP.		
a) Objective Oriented Program	b) Object Oriented Program	
c) Objective Oriented Programming	d) Object Oriented Programming	
82. How many types of Program Paradigm u	ise in Programming?	
a) 4	b) 2	
c) 1	d) 3	
83. Which one is not a feature of Object-oriented programming?		
a) Inneritance	b) Polymorphism	
c) Private84. What is the other name of 'My Class'?	d) Object	

a) My Base b) Parent c) Child d) None of these 85. Which member of Access Specifier is Inheritable? a) Protected Friend b) Public c) Private d) Protected 86. What is OLE? a) Objective Linking and Embedding b) Object Linking and Embedding c) Object Linking and Embedd d) Object Link and Embedding 87. Which one is the features of Constructor? a) Initialize the Object b) Pass unlimited arguments c) Use new keyword d) All of the Above 88. Code is: a) Update-able in the form editor **b)** Instructions c) Seldom used d) An object 89. Event-driven languages are: a) FORTRAN based b) Are used to write procedural languages c) OOP d) Designed to make programming GUI easier 90. The application name always appears in the: a) Properties window b) Intermediate window c) Code window d) Title bar 91. New keyword is used with thea) Destructor **b)** Constructor d) None of these c) Both 92. What is the full form of COM? a) Computer Object Model b) Component Objective Model c) Computer Objective Model d) Component Object Model 93. What is the full form of API in VB.Net? a) Application Programming Interface b) Application Program Interface c) Application Programming Interchange d) Application program Interchange 94. Overriding and Overloading is the method of a) Public b) Inheritance c) Polymorphism d) Abstraction window we can write code. 95. In b) Locals window a) Immediate window d) None of these c) Code editor window 96. What is the shortcut key to run the program? a) F2 **b) F5** c) F7 d) F4

97. OLE is not a part of common language runtime. a) True b) False 98. Dispose keyword is used ina) Public **b)** Destructor c) Friend d) Constructor 99. _____ is a similar type of Private member. a) Friend b) Public c) Overriding d) Protected 100. A performs invisible tasks even if you write no code. b) Private Method a) Friend d) Function c) Constructor 101. Whenever an application is created, a _____ is added. b) Class a) Form c) Property d) Object 102. The model does not offer a model for source code reuse. a) COM+ b) DCOM c) COM d).Net by default. 103. The function procedures are a) Public b) Private c) Protected d) Inherited 104. ______ is the ability to create procedures that can operate on objects of different types. b) Encapsulation a) Abstraction d) Inheritance c) Polymorphism 105. ______ is the process by which you can derive new classes from other classes. a) Abstraction b) Encapsulation c) Polymorphism d) Inheritance 106. Which is an example of Visual Basic Objects? a) Control Objects b) ASP.Net c) ADO.Net d) All of the above 107. What is the full form of ADO? a) Active Data Object b) ActiveX Data Object c) Active Database Object d) Active Data Objective 108. What is SOL? a) Structure Query Language b) Structured Query Language c) Structure queries languages d) Select Query Language 109. Which one is a database program? a) Oracle b) SQL Server

c) Microsoft ODBC Data Source	d) All of the above
110 works as a bridge betwa) Data Readerc) Data Adapter	ween data source and data set. b) Data Provider d) Data Relation
111. What is the full form of XML?a) Extension Mark Languagec) Extensible Markup Language	b) Extension Model Language d) Extensible Mark Language
112. How many methods are used in databaa) 1c) 2	se programming with VB.Net? b) 4 d) 3
113. What is the shortcut key to open Servea) Shift+Sc) Shift+Alt+S	r Explorer? b) Ctrl+Alt+S d) Ctrl+S
114. When was ADO introduce by Microsoa) 1990c) 1995	ft? b) 1991 d) 1996
115. Which one is Data Adapter Object?a) OLEDBc) ODBC	b) SQL d) All
116. ThroughControls we can a a) Data Bound Control c) Wizard	access information in the databases b) Data Control d) Report
117. Which does the solution explorer not da) Form Propertiesc) Form File	isplay? b) Reference Folder d) Assemble File
118. How many properties in SQL Commana) 2c) 3	nd? b) 1 d) 4
119. What is ODBC in VB.Net?a) Open Database Connectivityc) Open Database Connection	b) Open Data Connectiond) Open Data Connectivity
120. Programmer may also Access the data	inside the ComboBox and ListBox

120. Programmer may also Access the data inside the ComboBox and ListBox control. **a) True** b) False

TWO MARKS:

- 1. What is VB.NET?
- 2. What is entry point method of VB.NET program?

3. What are Shared methods?

- 4. What are Shared variables?
- 5. What are Shadows variable?
- 6. What are Static variable?
- 7. How to create a constant in VB.NET?
- 8. What is the purpose of Ansi keyword in VB.NET?
- 9. What is the purpose of Assembly keyword in VB.NET?
- 10. What is the purpose of Async keyword in VB.NET?
- 11. What is the purpose of Auto keyword in VB.NET?
- 12. What is the purpose of ByRef keyword in VB.NET?
- 13. What is the purpose of ByVal keyword in VB.NET?
- 14. What is the purpose of Default keyword in VB.NET?
- 15. What is the purpose of Friend keyword in VB.NET?
- 16. What is the purpose of In keyword in VB.NET?
- 17. What is the purpose of Iterator keyword in VB.NET?
- 18. What is the purpose of Key keyword in VB.NET?
- 19. What is the purpose of Module keyword in VB.NET?
- 20. What is the purpose of MustInherit keyword in VB.NET?
- 21. What is the purpose of MustOverride keyword in VB.NET?
- 22. What is the purpose of Narrowing keyword in VB.NET?
- 23. What is the purpose of NotInheritable keyword in VB.NET?
- 24. What is the purpose of NotOverridable keyword in VB.NET?
- 25. What is the purpose of Optional keyword in VB.NET?
- 26. What is the purpose of Out keyword in VB.NET?
- 27. What is the purpose of Overloads keyword in VB.NET?
- 28. What is the purpose of Overridable keyword in VB.NET?
- 29. What is the purpose of Overrides keyword in VB.NET?
- 30. What is the purpose of ParamArray keyword in VB.NET?
- 31. What is the purpose of Partial keyword in VB.NET?
- 32. What is the purpose of Private keyword in VB.NET?
- 33. What is the purpose of Protected keyword in VB.NET?
- 34. What is the purpose of Public keyword in VB.NET?
- 35. What is the purpose of ReadOnly keyword in VB.NET?
- 36. What is the purpose of Shadows keyword in VB.NET?
- 37. What is the purpose of Shared keyword in VB.NET?
- 38. What is the purpose of Static keyword in VB.NET?
- 39. What is the purpose of Unicode keyword in VB.NET?
- 40. What is the purpose of Widening keyword in VB.NET?
- 41. What is the purpose of WithEvents keyword in VB.NET?
- 42. What is the purpose of WriteOnly keyword in VB.NET?
- 43. What is the purpose of Dim statement in VB.NET?
- 44. What is the purpose of Const statement in VB.NET?
- 45. What is the purpose of Enum statement in VB.NET?
- 46. What is the purpose of Class statement in VB.NET?
- 47. What is the purpose of Structure statement in VB.NET?
- 48. What is the purpose of Module statement in VB.NET?
- 49. What is the purpose of Interface statement in VB.NET?
- 50. What is the purpose of Function statement in VB.NET?
- 51. What is the purpose of Sub statement in VB.NET?
- 52. What is the purpose of Declare statement in VB.NET?

- 53. What is the purpose of Operator statement in VB.NET?
- 54. What is the purpose of Property statement in VB.NET?
- 55. What is the purpose of Event statement in VB.NET?
- 56. What is the purpose of Delegate statement in VB.NET?
- 57. What are pre-processor directives in VB.NET?
- 58. What is the purpose of AddressOf operator in VB.NET?
- 59. What is the purpose of Await operator in VB.NET?
- 60. What is the purpose of GetType operator in VB.NET?
- 61. What is the purpose of Function Expression in VB.NET?
- 62. What is the purpose of If operator in VB.NET?
- 63. What is the purpose of Exit statement in VB.NET?
- 64. What is the purpose of Continue statement in VB.NET?
- 65. What is the purpose of GoTo statement in VB.NET?
- 66. What are dynamic arrays in VB.NET?
- 67. What is Jagged Array in VB.NET?
- 68. What is ArrayList in VB.NET?
- 69. What is Hashtable in VB.NET?
- 70. What is SortedList in VB.NET?
- 71. What is Stack in VB.NET?
- 72. What is Queue in VB.NET?
- 73. What is BitArray in VB.NET?
- 74. In how many ways a function can return value in VB.NET?
- 75. Can you create a function in VB.NET which can accept varying number of arguments?
- 76. Can you pass additional type of parameters after using params in function definition?
- 77. Which class acts as a base class for all exceptions in VB.NET?
- 78. What is the difference between System. ApplicationException class and
- System.SystemException class?
- 79. What is a stream in VB.NET?
- 80. Which class in VB.NET helps in reading from, writing to and closing files?
- 81. Briefly explain StreamReader class.
- 82. Briefly explain StreamWriter class.
- 83. Briefly explain BinaryReader class.
- 84. Briefly explain BinaryWriter class.
- 85. Explain usage of DirectoryInfo class.
- 86. Explain usage of FileInfo class.
- 87. What are the components of a Visual Basic Control?
- 88. What is the purpose of VB.NET Form control?
- 89. What is the purpose of VB.NET TextBox control?
- 90. What is the purpose of VB.NET Label control?
- 91. What is the purpose of VB.NET Button control?
- 92. What is the purpose of VB.NET ListBox control?
- 93. What is the purpose of VB.NET ComboBox control?
- 94. What is the purpose of VB.NET RadioButton control?
- 95. What is the purpose of VB.NET PictureBox control?
- 96. What is the purpose of VB.NET ProgressBar control?
- 97. What is the purpose of VB.NET ScrollBar control?
- 98. What is the purpose of VB.NET DateTimePicker control?
- 99. What is the purpose of VB.NET TreeView control?
- 100. What is the purpose of VB.NET ListView control?

FIVE/TEN MARKS:

- 1. What is Metadata?
- 2. What is the difference between VB and VB.Net?
- 3. What is the difference between C# and VB.Net?
- 4. What is namespace?
- 5. Which namespace are used for accessing the data?
- 6. What is JIT?
- 7. What is an assembly and its use?
- 8. What is strong name in .NET assembly?
- 9. What are the different types of assembly?
- 10. What is the difference between Namespace and Assembly?
- 11. What is INTERNAL keyword in .Net Framework?
- 12. What are Option Strict and Option Explicit?
- 13. What is the use of New Keyword?
- 14. What is ReDim keyword and its use?
- 15. What is jagged array in VB.Net?
- 16. What is Manifest?
- 17. What are all the differences between Dispose and Finalize()?
- 18. What is Garbage Collection?
- 19. What are the types of generations in garbage collector?
- 20. What is the use of Option explicit?
- 21. What is the difference between System.String and System.StringBuilder classes?
- 22. What is the difference between int and int32?
- 23. What is hashtable?
- 24. What are nested classes?
- 25. What is Enumerator?
- 26. What is Delegate?
- 27. What is Globalization?
- 28. What is the difference between Dataset and Datareader?
- 29. What is the difference between value and reference types?
- 30. What is TRACE in VB.Net?
- 31. What is Authentication and Authorization?
- 32. What are the types of Authentication?
- 33. What is Global Assembly Cache (GAC)?
- 34. What is CLR?
- 35. What is CTS?
- 36. What is CLS?
- 37. What is Managed code?
- 38. What is serialization in .Net?
- 39. How many languages are supported by .Net?
- 40. What is the difference between Convert.tostring and i.tostring method?
- 41. What are the two main parts of .NET?
- 42. What is the difference between thread and process?
- 43. What is strong typing and weak typing?
- 44. How many .NET languages can a single .NET DLL contain?
- 45. What is the class that allows an element to be accessed using Unique key?
- 46. What is Code Security?
- 47. Which DLL Is used for Microsoft .NET run time?
- 48. How many classes a DLL can contain?

- 49. How can we store decimal data in .NET?
- 50. What is deep copy?

UNIT IV

ONE MARKS:

1. Which is the best approach to assign a session in MVC? a) System.Web.HttpContext.Current.Session["LoginID"] =7; b) Current.Session["LoginID"] =7; c) Session["LoginID"] =7; d) None 2. RedirectToActionPermanent() Method for which Status code represents? a) 304 b) 302 c) 301 d) 300 3. RedirectToAction() Method for which Status code represents? b) 302 a) 304 c) 301 d) 300 4. What is ActionResult()? a) It is an abstract Class b) It is a Concrete Class c) Both A and B d) None 5. What is ViewResult()? a) It is an abstract Class b) It is a Concrete Class c) Both A and B d) None 6. return View() works like in ASP.Net MVC C# as a) Server.Transfer() b) Response.Redirect() c) Both A and B d) None 7. RedirectToAction() works like in ASP.Net MVC C# as a) Server.Transfer() b) Response.Redirect() c) Both A and B d) None 8. In which format data can be return from XML into table ? a) DataSet b) Datatable c) A and B d) None 9. Can we use view state in MVC? a) Yes b) No c) Both A & B d) None 10. What Request Processing technique follows ASP.Net? a) Top-Down b) Down-Up c) Pipeline d) Water fall

11. What is DRY principle in ASP.Net?		
a) Don't repeat yourself.	b) Don't revise yourself.	
c) both a and b	d) None	
12. What is default authentication in Internet Information Services (IIS)?		
a) Standard User	b) Administrator	
c) Anonymous	d) None	
13. What is the extension of MVC view when using $C#?$		
a) cshtml	b) vbhtml	
c) None	d) Both A & B	
14. What is the extension of MVC view when using vb.net?		
a) cshtml	b) vbhtml	
c) None	d) Both A & B	
	,	
15. How can you comment using Razor Syn	tax?	
a) *@ Comment me *@	b) @* Comment me *@	
c) @* Comment me @*	d) *(a) Comment me (a)*	
16. Which Namespace is used for Razor View Engine ?		
a) System.Web.Razor	b) System.Web.Mvc.WebFormViewEngine	
c) Both A & B	d) None	
,	,	
17. Which Namespace is used for ASPX Vie	ew Engine ?	
a) System.Web.Razor	b) System.Web.Mvc.WebFormViewEngine	
c) Both A & B	d) None	
18. The Razor View Engine uses to render s	erver side content.	
a) a	b) $< 0/2 = 0/2 >$	
c) Both A & B	d) None	
19. The ASPX View Engine uses to render server side content.		
	$(b) < \sqrt[6]{0} = \sqrt[6]{0} >$	
c) Both A & B	d) None	
20. Which is more faster between ASPX View Engine and Razor View Engine.		
a) ASPX View Engine	b) Razor View Engine	
c) Both A & B	d) None	
<i>^</i>	·	
21. Does Razor Engine supports for TDD?		
a) Yes	b) No	
c) None		
22. Does ASPX View Engine supports for TDD ?		
a) Yes	b) No	
c) None	,	
,		

22. How to Print value from Controller to View in MVC ?
| a) ViewBag.ECMDetail = "my message"; b) ViewBag.ECMDetail = "my message"; and c) ViewBag.ECMDetail = "my message"; and d) None | and in view @ViewBag.ECMDetail
nd in view ViewBag.ECMDetail
nd in view ViewBag.Title |
|---|--|
| 23. If you have already implemented differea) Authorization filtersc) Response filters | nt filters then what will be order of these filters?
b) Action filters
d) Exception filters |
| 24 is the last type of filter a) Authorization filters (IAuthorizationFilter b) Action filters (IActionFilter) c) Result filters (IResultFilter) d) Exception filters (IExceptionFilter) | to run in ASP.Net MVC application? |
| 25. Are MVC and Web API merged into on | e in MVC 6? |
| a) Yes | b) No |
| c) Both A & B | d) None |
| 26 Does MVC 6 introduced new ISON pro- | iant based structure? |
| a) Vas | b) No |
| c) Both A & B | d) None |
| | |
| 27. Does MVC 6 allow only save change, hi reflect changes? | tting the save but then refreshing the browser to |
| a) Yes | b) No |
| c) Both A & B | d) None |
| 28. Does vNext is now Open Sourced via th | e .NET Foundation and open to public contributions. |
| a) Yes | b) No |
| c) Both A & B | d) None |
| 29 Can vNext runs on both Mac and Linux | today (Mono Version)? |
| a) Yes | b) No |
| c) Both A & B | d) None |
| 30. How does work Viewstart in MVC (ASI a) Viestart is used to layout of the applicatio b) Viewstart is used like Masterpage in tradition of the views. c) Viewstart render first in the views. d) All of the above. | P.Net)?
m.
itional forms (ASP.Net pages). |
| 31. Viewstart comes under which folder nam | ne? |
| a) Views | b) Account |
| c) Shared | d) Home |
| 32 Does Viewstart override all Views lavou | it/template under "Views" folder in MVC ? |
| a) Yes | b) No |
| c) Both A & B | d) None |
| -, | -, |

33. What is the name of default Viewstart Page in ASP.Net MVC? a) ViewStart.cshtml b) Layout.cshtml c) Login.cshtml d) None 34. Which is the way to render Partial View using ASP.Net MVC Razor Engine? a) @Html.Partial(" PartialHeader") b) @Html.PartialView(" PartialHeader") c) @Html.PartialHtml("_PartialHeader") d) Both B and C 35. Which Namespace is used to "Display" in Data Annotation using MVC? a) System.ComponentModel b) System.ComponentModel.DataAnnotations c) Both A and B d) None 36. Which Namespaces are required to Data Annotation using MVC? a) System.ComponentModel b) System.ComponentModel.DataAnnotations d) None c) Both A and B 37. Are both TempData/ViewData require typecasting in MVC? a) Both (TempData/ViewData) requires type casting to avoid null exception. b) No, these (TempData/ViewData) does not require type casting. c) Both A) & B) d) None 38. Is ViewBag slower than ViewData in MVC? a) Yes b) No c) Both A & B d) None 39. Is ViewData faster than ViewBag in MVC? a) Yes b) No c) Both A & B d) None 40. Are both TempData/ViewData property of Controller base class in MVC? a) Yes b) No c) Both A & B d) None 41. Does TempData used to pass data from one page to another page in MVC? a) Yes b) No c) Both A & B d) None 42. Can ASP.Net Web API specialize to XML or JSON? a) Yes b) No c) None 43. Does Web API (ASP.Net) supports to non SOAP based like XML or JSON ? a) Yes b) No c) None 44. Does Web API (ASP.Net) supports to both version mobile apps and others ? a) Yes b) No c) Both A & B d) None

45. Can ASP.Net Web API, it works HTTP standard verbs like POST, GET, PUT, DELETE (CRUD Operations)?

b) No

d) None

a) Yes

c) Both A & B

46. Can ASP.Net Web API ability to both self hosting (outside of IIS) and IIS ?

c) None

47. Can ASP.Net Web API has ability to transport non HTTP protocols like TCP, UDP, Named Pipes etc ?

b) No

a) Yes

c) None

b) No

48. What is AuthConfig.cs in ASP.Net MVC?

a) AuthConfig.cs is used to configure route settings

b) AuthConfig.cs is used to configure security settings including sites oAuth Login.

- c) None
- d) All

49. What is BundleConfig.cs in ASP.Net MVC?

a) BundleConfig.cs in MVC is used to register filters for different purposes.

b) BundleConfig.cs in MVC is used to register bundles used by the bundling and minification, serveral bundles are added by default like jQuery, jQueryUI, jQuery validation, Modernizr, default CSS references.

c) All

d) None

50. What is FilterConfig.cs in ASP.Net MVC?

a) FilterConfig.cs is used to register global MVC filters, HandleErrorAttribute is registered by default filter. We can also register other filters.

b) FilterConfig.cs is used to register global MVC bundles.

c) None

d) All

51. What is RouteConfig.cs in ASP.Net MVC?

a) RouteConfig.cs is used to register MVC config statements, route config.

b) RouteConfig.css is used to register global MVC bundles.

c) None

d) All

52. For which ModelState.IsValid Validate?

a) It checks for Entityframework Model state.

b) It checks for valid Model State using DataAnnotations.

c) It checks for SQL database state.

d) None

53. Which Name space is used to create chart using ASP.Net MVC?

- a) using System.Web.MVC; b) using System.Web.Helpers;
- c) using System.Web.Chart;

d) All

a) Yes

54. How can we provide Height and Width ta) new Chart(width - 600, height - 400)c) new Chart(width: 600, height: 400)	o MVC Charts ? b) new Chart(width = 600, height = 400) d) All
 55. How can we set theme to MVC Charts? a) new Chart(width: 600, height: 400, theme b) new Chart(width: 600, height: 400, theme c) new Chart(width: 600, height: 400, theme d) None 	me: ChartTheme.Vanilla3D) :: ChartTheme = Vanilla3D) : Vanilla3D)
56. How can we give Title to MVC Charts?a) var chart = AddTitle("My First Chart")c) .AddTitle('My First Chart')	b) .AddTitle("My First Chart") d) All
 57. How can we add Series to MVC Charts? a) .AddSeries(chartType: "Bar", xValue: b) .AddSeries(chartType: "Bar", xValue = x" c) .AddSeries(chartType: "Bar", xValue: xV d) None 	xValue, yValues: yValue) Value, yValues = yValue) alue, yValues: yValue)
 58. How can we add Chart Type to MVC Cha) .NewSeries(chartType: "Bar") c) .AddSeries(chartType: "Bar") 	narts? b) .Series(chartType: "Bar") d) All
59. How can we write Chart output to MVCa) .Write(bmp);c) .Write("bmp");	View? b) Write("bmp"); d) All
60. Which name space using can send emaila) using System.Net.Mail;c) using System.Mail;	in ASP.Net MVC? b) using System.Net; d) None
61. If Razor View Engine need to add JQuer we can write it in Razor View?a) Replace @ to @@@ (tripple)c) None	 b) Replace @ to @@ (double) d) Both (A & B)
 62. How to set Default Value to Hidden Inpu a) @Html.HiddenFor(m => m.Name, "Jack" b) @Html.HiddenFor(m => m.Name, new (Value) None 	at Box using ASP.Net MVC? () (Value = "Jack")) lue = "Jack")
 63. How to check all errors of Model using A a) var errors = Model.Values.SelectMany(v = b) var errors = ModelState.SelectMany(v = c) var errors = ModelState.Values.SelectMany(v = 	ASP.Net MVC? => v.Errors); • v.Errors); fany(v => v.Errors);

64. AuthConfig.cs file is under in which App folder ?
a) App_Data
b) App_Start
c) Content
d) Filters
65. BundleConfig.cs file is under in which App folder ?
a) App_Data
b) App_Start
c) Content
d) Filters

66. FilterConfig.cs file is under in which App folder ?
a) App_Data
b) App_Start
c) Content
d) Filters

67. RouteConfig.cs file is under in which App folder ?
a) App_Data
b) App_Start
c) Content
d) Filters

68. WebApiConfig.cs file is under in which App folder ?
a) App_Data
b) App_Start
c) Content
d) Filters

69. Which filter will be execute at first using ASP.Net MVC?

- a) Action filters
- c) Response filters

b) Authorization filters

d) Exception filters

TWO MARKS:

- 1. What is ASP.NET?
- 2. What is Server control?
- 3. What is the web.config file?
- 4. Which compiler is used in ASP.NET?
- 5. How many types of Server controls are supported by ASP.NET?
- 6. What does "PostBack" mean in ASP.NET?
- 7. Write down different return types of a controller action method?
- 8. How to maintain sessions in MVC?
- 9. What do you know about JIT?
- 10. What is RedirectPermanent in ASP.Net?
- 11. What is ASP.NET Core?
- 12. What is AJAX in ASP.NET?
- 13. What is Round Trip in ASP.NET?
- 14. What is Razor in ASP.NET?
- 15. What is the REST architecture?
- 16. What are the types of Authentication in ASP.NET?
- 17. What is Query String in ASP? And what are its advantages and disadvantages?
- 18. What does the method Finalize do in ASP.NET?
- 19. Write down the name of all steps in the ASP.NET page life cycle?
- 20. Write about Cookies in ASP.NET?
- 21. What is the purpose of Web Services in ASP.NET?
- 22. Explain Local Resources and Global Resources?
- 23. List down various page events in ASP.NET?

- 24. What is Navigation control in ASP.NET?
- 25. Define TreeView control.
- 26. What's the use of Response.Output.Write()?
- 27. In which event of page cycle is the ViewState available?
- 28. What is the difference between Server.Transfer and Response.Redirect?
- 29. From which base class all Web Forms are inherited?
- 30. What are the different validators in ASP.NET?
- 31. Which validator control you use if you need to make sure the values in two different
- controls matched?
- 32. What is ViewState?
- 33. Where the viewstate is stored after the page postback?
- 34. How long the items in ViewState exists?
- 35. What are the different Session state management options available in ASP.NET?
- 36. How you can add an event handler?
- 37. What is caching?
- 38. What are the different types of caching?
- 39. Which type if caching will be used if we want to cache the portion of a page instead of whole page?
- 40. List the events in page life cycle.
- 41. Can we have a web application running without web.Config file?
- 42. Is it possible to create web application with both webforms and mvc?
- 43. Can we add code files of different languages in App Code folder?
- 44. What is Protected Configuration?
- 45. Write code to send e-mail from an ASP.NET application?
- 46. How can we prevent browser from caching an ASPX page?
- 47. What is the good practice to implement validations in aspx page?
- 48. Which protocol is used to call a Web service?
- 49. Can we have multiple web config files for an asp.net application?
- 50. What is the difference between web config and machine config?
- 51. What is Cross Page Posting?
- 52. How can we apply Themes to an asp.net application?
- 53. What is RedirectPermanent in ASP.Net?
- 54. What is MVC?
- 55. In which event are the controls fully loaded?
- 56. What is boxing and unboxing?
- 57. Differentiate strong typing and weak typing
- 58. How we can force all the validation controls to run?
- 59. List all templates of the Repeater control.
- 60. List the major built-in objects in ASP.NET?
- 61. Which namespaces are necessary to create a localized application?
- 62. What is the file extension of web service?
- 63. What are the components of ADO.NET?
- 64. What is the difference between ExecuteScalar and ExecuteNonQuery

FIVE/TEN MARKS:

- 1. Write down features of ASP.NET?
- 2. What is Common Language Runtime (CLR)?
- 3. What is ASP.NET MVC framework?

- 4. Which would be the right framework to be used ASP.NET MVC or ASP.NET Web API?
- 5. ASP.NET is open-source. Explain?
- 6. Explain the Global.asax file?
- 7. Explain the difference between Web.config and Machine.config file?
- 8. Write a step for Request Flow in ASP.NET MVC framework?
- 9. Explain the various modes for the Session state in ASP.NET?
- 10. Explain the differences between GridView and DataGrid?
- 11. What is the difference between custom controls and user controls?
- 12. What are web controls in ASP.NET?
- 13. Describe login Controls in ASP?
- 14. How would you explain the differences between Repeater and ListView?
- 15. What are the different validation controls in ASP.NET?
- 16. Describe loginStatus Controls in ASP?
- 17. Why do we use CheckBox in .NET?
- 18. Explain the HTML server controls in ASP.NET?
- 19. What is LINQ?
- 20. What is Caching and its different types?
- 21. Briefly describe the difference between the Web Site and Web Application?
- 22. Explain View State?
- 23. What is tracing in .NET?
- 24. Write down different Trace Methods provided in ASP.NET?
- 25. Explain ADO.net.
- 26. What are the event handlers that we can have in Global.asax file?
- 27. Explain role based security?
- 28. Explain the working of passport authentication.29. What are the advantages of Passport authentication?
- 30. What are the asp.net Security Controls?
- 31. How do you register JavaScript for webcontrols ?
- 32. What is the appSettings Section in the web.config file?
- 33. Which data type does the RangeValidator control support?
- 34. What is the difference between an HtmlInputCheckBox control and an
- HtmlInputRadioButton control?
- 35. What are the different types of cookies in ASP.NET?

<u>UNIT V</u>

<u>ONE MARKS:</u>

- 1. CLR is the .NET equivalent of _____
- a) Java Virtual Machine
- c) Common Type System

- b) Common Language Runtime

- d) Common Language Specification
- 2. The CLR is physically represented by an assembly named _____.
- a) mscoree.dll

b) mcoree.dll d) mscor.dll

- c) msoree.dll
- 3. SOAP stands for _____.
- a) Simple Object Access Program
- c) Simple Object Application Protocol
- b) Simple Object Access Protocol
- d) Simple Object Account Protocol

4. The language allows mo	re than one method in a single class.
a) C#	b) J#
c) C++	d) C
5 In $C^{\#}$ a subroutine is called a	
a) Function	 b) Metadata
a) Mathad	d) Managad as de
c) Method	d) Managed code
6. All C# applications begin executio	n by calling the method.
a) Class()	b) Main()
c) Submain()	d) Namespace
7 A is an identifier that den	otes a storage location
a) Constant	b) Reference type
c) Variable	d) Object
8 are reserved, and can	not be used as identifiers.
a) Keywords	b) literal
c) variables	d) Identifiers
9. Boxing converts a value type on th	e stack to an on the heap.
a) Bool type	b) Instance type
c) Class type	d) Object type
10. The character pair ?: is a	available in C#.
a) Unary operator	b) Ternary operator
c) Decision operator	d) Functional operator
11. In C#, all binary operators are	
a) Center-associative	b) Right-associative
c) Left-associative	d) Top-associative
-,	
12. An is a symbol that tells	s the computer to perform certain mathematical or logical
manipulations.	
a) Operator	b) Expression
c) Condition	d) Logic
13. A is any valid C# variable	ending with a colon.
a) goto	b) Label
c) Logical	d) Bitwise
14 C# has operator useful	for making two-way decisions
a) Looping	b) Functional
a) Exponential	d) Conditional
c) Exponential	d) Conditional
15causes the loop to conti	inue with the next iteration after skipping any statements in
between.	
a) Loop	b) Exit
c) Break	d) Continue

a) Operator	b) Integer
c) Exponential	d) Array
17. Arrays in C# are object	s.
a) Reference	b) Logical
c) Value	d)Arithmetic
18. Multidimensional arrays are so	metimes called Arrays.
a) Square	b) Triangular
c) Rectangular	d) Cube
19. parameters are used to	pass results back to the calling method.
a) Input	b) Reference
c) Value	d) Output
20. The formal-parameter-list is alw	vavs enclosed in
a) Square	b) Semicolon
c) Parenthesis	d) Colon
c) i arentifesis	
21 variables are visible of	nly in the block they are declared.
a) System	b) Global
c) Local	d) Console
22. C# does not support cons	structors.
a) parameterized	b) parameter-less
c) Class	d) Method
23. A structure in C# provides a un	ique way of packing together data of types.
a) Different	b) Same
c) Invoking	d) Calling
c) mvoking	u) Cannig
24. Struct's data members are	by default.
a) Protected	b) Public
c) Private	d) Default
25. A creates an object by	copying variables from another object.
a) Copy constructor	b) Default constructor
c) Invoking constructor	d) Calling constructor
26. The methods that have the same	e name, but different parameter lists and different definition
a) Mathad Avarlanding	b) Method Overriding
a) Method Overwriting	d) Method Overreading
c) we not overwriting	u) memou Overreading
	ds known as methods to provide access to data
27. The C# provides special method	I
27. The C# provides special method members.	
27. The C# provides special methodmembers.a) Loop	b) Functions

28. When an instance method declaration in	cludes the abstract modifier, the method is said to	
be an	h) Instance method	
a) Souled method	d) Expression method	
c) sealed method	d) Expression method	
29 The theory of implies that user ca	an control the access to a class method or variable	
a) Data hiding	h) Encanculation	
c) Information Hiding	d) Polymorphism	
•)	<i>a) i o j mo p mo m</i>	
30. Inheritance is in nature.		
a) Commutative	b) Associative	
c) Transitive	d) Iterative	
, ,	, ,	
31. The point at which an exception is throw	wn is called the	
a) Default point	b) Invoking point	
c) Calling point	d) Throw point	
32. In C#, having unreachable code is alway	ys an	
a) Method	b) Function	
c) Error	d) Iterative	
33. $C\#$ treats the multiple catch statements	like cases in a statement.	
a) If	b) Switch	
c) For	d) While	
34. C# supports a technique known as	, which allows a method to specify explicitly the	
a) Method Implementation	b) Implicit Interface Implementation	
c) Explicit Interface Implementation	d) Iterative Interface Implementation	
35. The reason that C# does not support mu	ltiple inheritances is because of	
a) Function collision	d) Interface colligion	
c) Function conision	u) Interface comsion	
36 is a set of devices through whi interactive set of commands.	ch a user communicates with a system using	
a) Console	b) System	
c) Keyboard	d) Monitor	
37. Exponential formatting character ('E' o	r 'e') converts a given value to string in the form of	
a) m.dddd E+xxx	b) m.dddd	
c) E+xxx	d) None of the above	
38. The are the Graphical User Inte	rface (GUI) components created for web based	
interactions		
a) Web forms	b) Window Forms	
c) Application Forms	d) None of the above	

39. In Microsoft Visual Studio, ______ technology and a programming language such as C# is used to create a Web based application.

a) JAVA	b) J#
c) VB.NET	d) ASP.NET

40. The controls available in the tool box of the _____ are used to create the user interface of a web-based application.

a) Microsoft visual studio IDE	b) Application window
c) Web forms	d) None of the above

41. The infrastructure that supports these dynamic operations at run time is called the_____.

a) CLR	b) CTS
c) CLS	d) DLR

42.The_____keyword is new to C# 4.0, and is used to tell the compiler that a variable's type can change or that it is not known until runtime.

a) Covariance	b) dynamic
c) Contravariance	d) Object

43._____ methods are not supported for dynamic types.

a) Anonymous	b) Static
c) Abstract	d) Extension

44.myMobile.Accept(55, inReject: false); Above statement is an example of which new concept of C# 4.0?

a) Named Parameters

c) dynamic

b) Optional Parameters d) Variance

45.COM Interop is simplified in C#4.0 e.g.var doc = Application.GetDocument("MyFile.txt"); In above statement_____ keyword was essential in parameters of GetDocument() in previous versions of C#. a) out b) named c) base d) ref

46.Covariance and Contravariance are new features introduced in C# 4.0.True/False? a) False **b) True**

47._____ parameters allows you to give a method parameter a default value so that you do not have to specify it every time you call the method.

a) optional	b) named
c) out	d) ref

48.Duck typing is implemented by using	keyword.
a) dynamic	b) object
c) ref	d) base

49. Web Forms consists of a	and a	·
a) Template, Component		b) CLR, CTS
c) HTML Forms, Web services		d) Windows, desktop

50. The	parentheses that follow	indicate that no information is passed to Main ().
a) Empty, class		b) Empty, submain
c) Empty, Mai	n	d) Empty, Namespace
51. Is it possibl	e to store multiple data types	in System. Array?
a) Yes		b) No
52. What is thea) * (Asterisk)c) % (Percent)	wild card character in the SQ	 DL "like" statement? b) # (Pound) d) \$ (Dollar)
53. Which of th	e following is the root of the	.NET type hierarchy?
a) System.Obj	ect	b) System.Base
c) System.Root		d) System.Parent
54. C# doesnot	support:	
a) abstraction		b) polymorphism
c) multiple inh	eritance	d) inheritance
		

55. Your company uses Visual Studio.NET 2005 as its application development platform. You are developing an application using the .NET Framework 2.0. You are required to use a datatype that will store only numbers ranging from -32,768 to 32,767. Which of the following datatypes will you use to accomplish the task?

a) short	b) System.Int16
c) string	d) a and b

56. Which of the following jobs are NOT performed by Garbage Collector?

1.Freeing memory on the stack.

2. Avoiding memory leaks.

3.Freeing memory occupied by unreferenced objects.

4. Closing unclosed database collections.

5.Closing unclosed files.

a) 1, 2, 3	b) 1, 4, 5
c) 3, 5	d) 3, 4

57. Which of the following statements is correct about Managed Code?

a) Managed code is the code that runs on top of Windows.

b) Managed code is the code that is written to target the services of the CLR.

c) Managed code is the code where resources are Garbage Collected.

d) Managed code is the code that is compiled by the JIT compilers.

58. How does assembly versioning in .NET prevent DLL Hell?

a) The runtime checks to see that only one version of an assembly is on the machine at any one time.

b) The compiler offers compile time checking for backward compatibility.

c) .NET allows assemblies to specify the name AND the version of any assemblies they need to run.

d) None of the above.

59. Which of the following is/are not types of a) Single-Dimensionalc) Jazzed arrays	of arrays in C#? b) Multidimensional d) Jagged arrays
60. A variable which is declared inside a mea) Localc) Static	thod is called a variable b) Private d) Serial
61. Two methods with the same name but wa) Overloadingc) Duplexing	ith different parameters. b) Multiplexing d) Loading
62. Which file contains configuration data for a) web.configc) webapplication.vsdisco	br each unique URl resource used in project? b) global.asax d) assemblyinfo.cs
63. Features of Read only variablesa) Declaration and initialization is separatedb) It is allocated at compile timec) It is allocated at runtimed) all of the above	
64. Different ways a method can be overloada) Different parameter data typesc) Different number of parameters	ded in C#.NETb) Different order of parametersd) All of above
65. Is it possible to change the value of a vana) Yes	riable while debugging a C# application? b) No
 66. Which of the following constitutes the .N 1. ASP.NET Applications 2. CLR 3. Framework Class Library 4. WinForm Applications 5. Windows Services a) 2, 5 c) 2, 3 	NET Framework? b) 2, 1 d) 3, 4

67. Which of the following statements is correct about the C#.NET program given below? namespace PskillsConsoleApplication

```
class Baseclass
{
    int i;
    public Baseclass(int ii)
    {
        i = ii;
        Console.Write("Base ");
    }
}
```

{

```
class Derived : Baseclass
   {
     public Derived(int ii) : base(ii)
     {
       Console.Write("Derived ");
     }
  class MyProgram
   {
     static void Main(string[] args)
     {
       Derived d = new Derived(10);
     }
  }
}
a) The program will report an error in the statement base(ii).
b) The program will work correctly if we replace base(ii) with base.Baseclass(ii).
c) The program will output: Base Derived
```

d) The program will work correctly only if we implement zero-argument constructors in Baseclass as well as Derived class.

68. Managed methods will be marked as ----- in MSIL code

a) mscorjit	b) cil
c) dgclr	d) None

69. Identify which is true

a) DataView ia subset of row and not columns

b) find can be done only on sorted columns

c) Sorting can be done on multiple columns

d) None of these

70. Which of the following .NET components can be used to remove unused references from the managed heap?

a) Class Loader c) CTS	b) Garbage Collector d) CLR
71. A local variablea) Can be used anywhere in the programc) Must accept a class	b) Is declared within a methodd) Represent a class object
72. An instance variablea) is an object of a classc) is a method of a class	b) represents an attribute of an object d) a and c
73. Private Button print = new button();a) creates a button controlc) instantiates button control	b) initializes a button controld) Both a and c
74. An instance methoda) Represents the behaviour of an object	b) Represents the attribute of an object

c) Represents another class	d) Both a and b
 75. A Constructor a) is used to create objects b) must have the same name as the class it is c) is a method of a class d) Both b and c 	declared within
 76. class Test: Form { } a) Creates the class Test : Form b) Creates the class Test that inherits the c) Creates the class form that inherits the cla d) Both a and b 	class Form ss Test
77. A variable declared inside a method is caa) Staticc) Local	alled a variable b) Private d) Serial
78. Defining two methods with the same nara) Loadingc) Multiplexing	ne but with different parameters is called.b) Overloadingd) Duplexing
 79. Find any errors in the following BankAc balance = 0; } a) Name c) Return type 	count constructor: Public int BankAccount() {b) Formal parametersd) No errors
80. In the body of a method, C# uses the var whose method is being invokeda) callc) do	 iable named to refer to the current object b) this d) that
81.String mystring; Creates a(n)a) classc) Object	b) Constructor d) a and b
82. An Event isa) The result of a user's actionc) code to force user's action	b) result of a partyd) All of the above
83. A delegate definesa) a Washington representativec) a means of passing arrays into methods	b) a class that encapsulates methodsd) a substitute for an inherited method
84. Is it possible to pass methods as argumen a) True	nts for other methods without modification. b) False
85. All interfaces must contain IDrivable a) True	b) False

86. What is the proper header for a class that intends to use an interface.

a) class MyClass iFace	b) class Myclass ; IFace
c) class MyClass : IFace	d) class myClass {IFace}

87. In order for a class to use an interface, it must

a) inherit the properties of the interfaceb) contain the same methods as the interfacec) create an interface objectd) All of the above

88. Every class directly or indirectly extends the _____ class.
a) System b) Object
c) Drawing d) Console

89. The concept of composition specifies that you can.

a) Compose good code with C#

b) Compose C# projects with different objects

c) Reduce errors by remaining composed during programming

d) All of the above

90. Polymorphism occurs when the methods of the child class.

a) Override the parent class methods but maintain the implementation

b) Maintain the same return type and arguments as the parent class, but implement it differently

c) Have different return types and arguments than the parent class d) Are Virtual

91. To output the value of multidimensional array, Console.WriteLines(___)a) myArray[1][3];b) myArray[1]3];c) myArray{1}{3};d) myArray(1),(3);

92. All methods in an abstract base class must be declared abstract.a) Trueb) False

93. Methods that are declared abstract in the base class must show implementation at the time of declaration.

a) True

b) False

94. The code public class $B : A \{ \}$

a) Defines a class that inherits all the methods of A

b) Defines a class that inherits the public and protected methods of A only

c) Errors

d) Both a and b

95. Assuming that public class $B : A \{ public B(int i) : base(i) \{ \} \}$ compiles and runs correctly, what can we conclude about the constructors in the class A?

a) One constructor takes an argument of type i

b) There is only a default constructor

c) One constructor takes an arguments of the type int

d) False

96. Classes declared with the sealed keyword cannot be base class.

a) True	b) Faise
97. A method an except	ption when that method detects that a problem has occured
a) Trys	b) Catches
c) Throws	d) Both a and b
98. Exception objects are der	ived from the class.
a) Try	b) Catch
c) Exception	d) Event

99. An abstract class

a) may contain instance variables c) may extend another class

b) may contain constructors d) All of the above

100. A block enclose the code that could throw an exception.

a) Try	b) Catch
c) Exception	d) Both a and b

TWO MARKS:

- 1. What is C#?
- What are indexers in C# .NET? 2.
- 3. What is the JIT compiler process?
- 4. What are the types of classes in C#?
- 5. What are extension methods in C#?
- 6. What is the difference between ref and out keywords?
- What is Boxing and Unboxing in C#? 7.
- 8. What is Reflection in C#?
- 9. What is the difference between to dispose and finalize methods in C#?
- 10. What is the Constructor Chaining in C#?
- 11. What is a multicasting delegate in C#?
- 12. How to implement a singleton design pattern in C#?
- 13. What are namespaces in C#?
- 14. Who can be the members of namespaces in C#?

FIVE/TEN MARKS:

- 1. How is C# different from the C programming language?
- 2. What is Common Language Runtime (CLR)?
- What is garbage collection in C#? 3.
- What is the difference between C# abstract class and an interface? 4.
- 5. What is inheritance? Does C# support multiple inheritance?
- What is Managed or Unmanaged Code? 6.
- What is the difference between a struct and a class in C#? 7.
- 8. What are Properties in C#?
- 9. What are partial classes in C#?
- 10. What is the difference between late binding and early binding in C#?
- 11. What are the different ways in which a method can be Overloaded in C#?
- 12. What is the difference between constant and read-only in C#?
- 13. Can multiple catch blocks be executed?

a) T

 $1 \rightarrow E_{-1}$

- 14. What is Jagged Arrays?
- 15. What's the difference between the System.Array.CopyTo() and System.Array.Clone()?
- 16. What are delegates in C#?
- 17. What are sealed classes in C#?
- 18. What are Generics in C#?
- 19. Describe Accessibility Modifiers in C#?
- 20. What is a Virtual Method in C#?
- 21. What is Multithreading with .NET?
- 22. What is a Hash table class in C#?
- 23. What is LINQ in C#?
- 24. What is File Handling in C#?
- 25. List down the commonly used types of exceptions?
- 26. What is the difference between "is" and "as" operators in C#?
- 27. What is Singleton design pattern in C#?
- 28. What is tuple in C#?
- 29. What are Events?
- 30. What is the difference between Dispose() and Finalize() methods?
- 31. What is the difference between Array and ArrayList?
- 32. Write a Features of Generics in C#?
- 33. Difference between SortedList and SortedDictionary in C#.

About the Author

Mrs. S.I. Anto Ramya was born in 1985 in the state of Kerala. She is currently working as an Assistant Professor in the Department of Computer Science, St. Joseph's College of Arts and Science for Women, Hosur. She has completed M.C.A in Anna University and M.Phil., in Perivar University. She has a versatile experience of 14 years. She has published papers in National and International Journals. Her areas of interest include Machine Learning, Block Chain Technology and Cloud Security. Received the Best Senior Faculty Award from Novel Research Academy, Registered under the Ministry of MSME, Government of India. She has published books on Fundamentals of Information Technology (ISBN:9789355282545), Programming in Java (ISBN: 9789355773333) and RDBMS (ISBN: 9789355773104).