Question Bank

1.Compare procedural programming with object oriented programming for what type of application is the procedural programming is suitable and for what type OOP is suitable?Justify your answer.

2. Describe how data are shared by functions in procedure-oriented programs?

3. Distinguish between the following terms:

(a) Object and classes
(b) Data abstraction and data encapsulation
(c) Inheritance and polymorphism
(d) Dynamic binding and message passing

4. What do mean by abstract class and container class?Describe their use with the help of c++ program?

5. How does a main () function in c++ differ from main () in c?

6. When is an object created and what is its lifetime?

7.What is the basic difference between manipulators and ios member functions in implementation?Give examples.

8. How is the working of member function different from friend function and a non member function?

9. Explain the purpose of new and delete operator by using C++ program.

10. What do you mean by dynamic binding? How it is useful in OOP?

11.What is the difference between association aggregation and inheritance relationship?

12.What do you mean by operator overloading and method overloading?write a distance class which contains data members of distance in meters,centimeters and millimeters.The class must have overloaded operators for addition + and subtraction- respectively.

13 Illustrate the concept of inheritance by defining three classes student,exam and result,where result is inherited from exam and exam is inherited from student.write possible constructors to initialize the values.write a main function to test the constructor execution by creating objects.

14.Explain the following terms in the context of object oriented programming. Also explain how these concepts are implemented in C++ by giving an example program for each.

(a)Benefits of Data Abstraction

(b)Encapsulation

(c)Virtual base class and when do we make it.

(d) Polymorphism and its types.

15. Define a class student with the following specifications:

Adm_no integer

Sname 20 characters

Eng, math, science float (marks in three subjects)

Total float

Ctotal() a function to calculate eng + math + science marks

Public member functions of class student

Takedata() function to accept values for adm_no , sname, marks in eng, math, science and invoke ctotal() to calculate total.

Showdata() function to display all the data members on the screen

16.What is inline function? When will you make a function inline and why ?

17. What is a pure virtual function ? Explain use of pure virtual function with an example.

18.Explain the concept of default constructor,copy constructor and parameterized constructor with the help of suitable c++ program.

19.What is an exception? Explain how exceptions are handled in C++, with the help of an example program. When do we used multiple catch handlers?

20.When should a program throw an exception?What do you mean by rethrow an exception?

21.What is generic programming? How is it implemented in c++?

22.A template can be considered as a kind of macro. Then, what is the difference between them?

23.Distinguish between the term class template and template class.

24.Write appropriate statements to create a template class for Queue data structure in C++.

25.Distinguish between overloaded functions and function templates. Write a function template for finding the minimum value contained in an array.
26.Write a program in c++ to read 2 files simultaneously.

27.Write a program to creat a file emp.data with employee number,name,deduction and allowances as record fields.poen a file,read a record,calculate the salary and write back to the same file.

28.What are the various classes available for file operations.

29.Input student Name, Rollno, Branch, Age and telephone no as a record through class and display all theinformation.

30 Input Name, Degignation, Basic Salary of employee into the employee record and calculate

TA	=	55%	of	Basic
DA	=	65%	of	Basic
HRA	=	35%	of	Basic
PF	=	12%	of	Basic

Also calculate Gross Salary and net salary

a) Use Array to input minimum 3 records (3 persons data) and display all the records sequentially.

31. Input your date of Birth and current date through structure and calculate your age in Year, Month and days assume that 1 year = 365 days and 1 month = 30 days.

32.Create a student class having data members roll, class & address, mark structure having data members roll, sub1, sub2, sub3 and a student detail structure having data members roll, class total marks, no of subject pass & overall pass. Those students who have appeared the exam, their information only stored in the mark structure array. Write a program which will collect the information & fill the data in student detail array depending on the pass criteria.

33.Define a class "string" with members to initialize and determine the length of the string. Overload the operators '+' and '+=' for the class "string".

34. Describe the various approaches by which we can detect the end of file condition

35.A class template is known as a parameterized class comment. Write a class template to represent a generic vector. Include member functions to perform the following tasks:

(a) To create the vector
(b) To modify the value of a given element
(c) To multiply by a scalar values
(d) To display the vector in the form (10, 20, 30 …)

36.What is the function supported by file stream classes of performing I/O operations?

37.What are the various elements of OOP?

38.What are the advantages of OOP?

39.Explain Encapsulation concept in OOP.

40.What is Information Hiding in OOP?

41.Explain some characteristics of inheritance.

42.What is the difference between abstract class and interface?

43.What are the Limitations and Restrictions of Interface ?

44.What is a Virtual Functions in class?

45.What is polymorphism in Object Oriented Programming (OOPS)Languages?

46.What is the difference between value parameter and referenceparameter?

47.Write a program to Sort a list of strings into alphabetical order using anarray of pointers.

48.How are structures in C different from a class? What is meant bydynamic initialization of a variable? Explain how memory is allocated toclasses & objects?

49.How does C++ uses concept of reusability? Write a program in C++ toillustrate use of Polymorphism.

50.What are various types of files? What are the various modes in which afile can be opened? Explain by giving examples.

51.What are the various types of inheritance in C++? Give an example.

52.Write a program to Sort a list of strings into alphabetical order using anarray of pointers.

53.Explain class objects. With the help of example explain how data hidingand encapsulation characteristics are achieved in C++.

54.How do namespace help in preventing pollution of the global namespace?

55.Explain how new and delete operators manage memory allocation/deallocationdynamically?

56.Whatis pure virtual function? Why and when it is used? Give example.

57.What is friend function? How it is different from member function?

58.Write a program in c++ to find reverse of number?

59.What is polymorphism? Give difference between function overloading andoverriding with example?

60.What is Generic function?Give example.Explain overloading of genericfunction with the help of c++ program.

61.What are virtual functions and pure virtual functions? Explain the use ofhaving abstract classes.

62.Write a CPP program to declare three classes. Declare integer array asdata member in each class perform addition of two data member arraysinto array of third class. Use friend functions.

63.What is meant by dynamic initialization of a variable? Explain how memoryis allocated to classes & objects?

64.How does C++ uses concept of reusability? Write a program in C++ toillustrate use of Polymorphism.

65.What are various types of files? What arethe various modes in which a file can be opened? Explain by givingexamples.

66.What are the various types of inheritance in C++? Give an example ofeach.

67.What are virtual functions and pure virtual functions? Explain theuse of having abstract classes.

68.What are pure virtual functions? Explain the mechanism of virtual functions.

69.Briefly describe the class hierarchy provided by C++ for stream handling.

70.What is object oriented programming? Explain features of OOPs?

71.'Describe different file opening modes in c++.

72.Write a Program to copy contents of one file into another file in C++?

73.What is inheritance? What are different types of inheritance? Explain multipleinheritances with example?
78.What are container classes?

79.What is the use of command line arguments?

80.What is the difference between an algorithm and a flowchart?

81.Draw a flowchart for a program which adds two matrices of theOrder 2×2.

82.What is a structure and how is it different from a union?

83.What is the role of classes in C++?

84.What is the difference between call by reference and call by parameter?

85.What are inline member functions?

86.What function can be used to open a file in C++?

87.What are pure virtual functions

88.What is data abstraction?

89.What is constructor?

90.What is enumerated data type?

91.What is difference in multiple and multilevel inheritance?

92.What is friend function?

93.What is input/output stream in c++?

94.What,is structure of C++ program?

95.What is class and instance?

96.What is difference between structure and union?

97.What is virtual keyword used for ?

98.Explain in detail different types of operator in c++.

99.Expalin in brief different types of bindings in c++.

100.What do you mean by file positioning function in c++?

QUIZ QUESTIONS (OOPs USING C++)

1. You can use C++ as a procedural, as well as an object-oriented, language

A. True **B.** False

2. A default catch block catches

A. all thrown objects

B. no thrown objects

C. any thrown object that has not been caught by an earlier catch block

D. all thrown objects that have been caught by an earlier catch block

3. Adding a derived class to a base class requires fundamental changes to the base class

A. True **B.** False

4. Format flags may be combined using

A. the bitwise OR operator (|)

B. the logical OR operator (||)

C. the bitwise AND operator (&)

D. the logical AND operator (&&)

5. The use of the break statement in a switch statement is

A. optional

B. compulsory

C. not allowed. It gives an error message

D. to check an error

E. None of the above

6. To expose a data member to the program, you must declare the data member in the _____ section of the class

A. common **B.** exposed

C. public **D.** unrestricted

E. user

7. Evaluate the following expression: 3 >6&&7>4

A. True **B.** False

8. Which of the following are valid characters for a numeric literal constant?

A. a comma

B. a dollar sign ($)

C. a percent sign (%)

D. a space

E. None of the above

9. A function that changes the state of the cout object is called a(n) _____

A. member **B.** adjuster

C. manipulator **D.** operator

10. A C++ program contains a function with the header int function(double d, char c). Which of the following function headers could be used within the same program?

A. char function(double d, char c)

B. int function(int d, char c)

C. both (a) and (b)

D. neither (a) nor (b)

11. When the compiler cannot differentiate between two overloaded constructors, they are called

A. overloaded **B.** destructed

C. ambiguous **D.** dubious

12. Some Streams work with input, and some with output

A. True **B.** False

13. If you design a class that needs special initialization tasks, you will want to design a(n) _____

A. housekeeping routine

B. initializer

C. constructor

D. compiler

14. Which type of statement does not occur in computer programs?

A. sequence **B.** loop

C. denial **D.** selection

15. The newline character is always included between

A. pair of parentheses

B. pair of curly braces

C. control string

D. &

E. None of the above

16. To be called object-oriented, a programming language must allow

A. functions that return only a single value

B. #include files

C. inheritance

D. All of the above

17. A function that returns no values to the program that calls it is _____

A. not allowed in C++

B. type void

C. type empty

D. type barren

18. The keyword used to define a structure is _____

A. stru **B.** stt

C. struct **D.** structure

19. If container classes are carefully constructed, then these tools are available to work with structures that are not _____

A. valid without container classes

B. programmer-defined

C. type-specific

D. public

20. Header files often have the file extension _____

A. .H **B.** .HE

C. .HEA **D.** .HEAD

21. The #ifndef directive tests to see whether _____

A. a class has been defined

B. a variable has been given a value

C. a class has no variable definitions

D. any objects of the class have been instantiated

22. Which of the following statements is false?

A. A function is a block of code that performs a specific task

B. Functions allow programmers to break large and complex problems into small and manageable tasks

C. Functions allow programmers to use existing code to perform common tasks

D. Functions can be called, or invoked, only once in a program

E. Programmer-defined functions can be either value-returning or void

23. The generic type in a template function

A. must be T

B. can be T

C. cannot be T for functions you create, but may be for C++'s built-in functions

D. cannot be T

24. When a child class function is called, the compiler looks first for a matching function name in the _____

A. class of the object using the function name

B. immediate ancestor class

C. base class

D. descendant class

25. A function that is called automatically each time an object is destroyed is a

A. constructor **B.** destructor

C. destroyer **D.** terminator

26. If you create an instantiation of a class template with an int, and then create a second instantiation with a double, then

A. you must precede each function call with the word int or double

B. once a function is used as one type, it becomes unavailable for use with the other type

C. there is no difference in the procedure to call a member function

D. you cannot perform this operation in C++

27. The step-by-step instructions that solve a problem are called _____

A. an algorithm

B. a list

C. a plan

D. a sequential structure

28. The type to be used in an instantiation of a class template follows _____

A. the generic class name

B. the keyword template

C. the keyword class

D. the template definition

28. The type to be used in an instantiation of a class template follows _____

A. the generic class name

B. the keyword template

C. the keyword class

D. the template definition

30. When you pass a variable _____, C++ passes only the contents of the variable to the receiving function

A. by reference

B. by value

C. globally

D. locally

31. The best form of coupling is _____

A. complete **B.** tight

C. loose **D.** free

32. Paying attention to the important properties while ignoring inessential details is known as_____

A. selectiveness **B.** polymorphism

C. abstraction **D.** summarizing

33. What does C++ append to the end of a string literal constant?

A. a space

B. a number sign (#)

C. an asterisk (*)

D. a null character

34. An array name is a _____

A. subscript

B. formal parameter

C. memory address

D. prototype

35. To enter a comment in a C++ program, you begin the comment with _____

A. ** **B.** &&

C. \\ **D.** @

E. //

36. Which of the following is(are) invalid string constant(s)?

A. '7.15 pm'

B. "i like e"

C. "7.3el2"

D. "1234el2"

E. None of the above

37. You define a structure type globally because _____

A. you save many lines of code by not rewriting an identical structure definition in each function that uses it

B. you will never change its definition

C. it is required in C++

D. All of the above

38. Overloaded functions are required to

A. have the same return type

B. have the same number of parameters

C. perform the same basic functions

D. None of the above

39. Redirection redirects

A. a stream from a file to the screen

B. a file from a device to a stream

C. a device from the screen to a file

D. the screen from a device to a stream

40. You mark the beginning of a function's block of code with the _____

A. /

B. *

C. {

D. }

E. either (c) or (d) can be used

41. When you omit parameters from a function call, values can be provided by

A. formal parameters

B. reference parameters

C. overloaded parameters

D. default parameters

42. The first element in a string is

A. the name of the string

B. the first character in the string

C. the length of the string

D. the name of the array holding the string

43. Variables declared outside a block are called _____

A. global **B.** Universal

C. stellar **D.** External

44. The compiler converts your C++ instructions into _____

A. edited code

B. object code

C. source code

D. translated code

45. A fundamental type such as int or double is a _____

A. programmer-defined type

B. complex type

C. nonscalar type

D. scalar type

46. The return type you code for all constructors is _____

A. void

B. the class type

C. the same type as the first data member defined in the class

D. no type

47. When an object-oriented program detects an error within a function, the function _____

A. throws an exception

B. throws a fit

C. catches a message

D. catches an exception

48. Using a statement at the wrong time or with an inappropriate object creates a

A. logical error

B. syntax error

C. compiler error

D. language error

49. When you create a derived class and instantiate an object _____

A. the parent class object must be constructed first

B. the child class object must be constructed first

C. the parent class object must not be constructed

D. the child class object must not be constructed

50. Evaluate the following expression: 4 >6 || 10 < 2 * 6

A. True **B.** False

51. The base class for most stream classes is the _____ class

A. ios **B.** out

C. in **D.** app

52. Which of the following while clause will stop the loop when the value in the age variable is less than the number 0?

A. while age < 0

B. while (age < 0)

C. while age >= 0;

D. while (age >= 0);

E. while (age >= 0)

53. Which of the following is a C++ object?

A. cin **B.** >>

C. iostream **D.** read()

54. The last statement in a function is often a(n) _____

A. return **B.** goodbye

C. finish **D.** endfunction

55. When the function int someFunction(char c) throw( ) is executed, _____

A. it can throw anything

B. it may throw an integer

C. it may throw a character

D. it may not throw anything

56. The two statements that can be used to change the flow of control are

A. if and switch

B. if and while

C. switch and do-while

D. break and continue

E. None of the above

57. If p and q are assigned the values 2 and 3 respectively then the statement p = q++

A. gives an error message

B. assigns a value 4 to p

C. assigns a value 3 to p

D. assigns a value 5 to p

E. None of the above

58. Which of the following is the insertion operator?

A. >>

B. <<

C. //

D. /*

E. both (a) and (b)

59. Functions that returns information about an object's state can be classified as _____

A. inspector functions

B. mutator functions

C. auxiliary functions

D. manager functions

60. An auxiliary function _____

A. return information about data members

B. changes the state of data members

C. performs an action or service

D. creates and destroys objects

61. To create and execute a C++ program, you need to have access to

A. a C++ compiler

B. a C++ translator

C. an object code editor

D. a text editor

E. both (a) and (d)

62. If you omit any constructor argument when you instantiate an object, you must use default values_____

A. for all parameters to the constructor

B. for all parameters to the right of the argument

C. for all parameters to the left of the argument

D. for no other parameters

63. Many programmers separate a class into two files: _____

A. one for the declarations and one for the implementations

B. one for the void functions and one for the other functions

C. one for the public data and one for the private data

D. one for the primary functions and one for the auxiliary functions

64. A major advantage of inheritance is

A. reducing the time it takes to create new objects

B. not having to think about how objects will be used

C. reducing the amount of memory required to execute a progrma

D. enabling people who have not studied programming to create useful applications

65. The feature that allows the same operations to be carried out differently depending on the object is _____

A. polymorphism **B.** polygamy

C. inheritane **D.** multitasking

66. Precedence determines which operator

A. is evaluated first

B. is most important

C. is fastest

D. operates on the largest number

E. None of the above

67. Which of the following is a C++ class?

A. >> **B.** read()

C. cin **D.** iostream

68. You typically initialize a String variable to _____

A. an asterisk

B. a space enclosed in single quotes

.

C. the number 0

D. a zero-length string

69. The set of instructions for how to tie a bow is an example of the _____ structure

A. control **B.** repetition

C. selection **D.** sequence

E. switching

70. If no exception is thrown _____

A. a catch block will cause an error

B. the first catch block coded will execute

C. the last catch block coded with execute

D. any catch blocks coded with be bypassed

71. A program that predicts the exact sequence in which events will take place is said to be _____

A. compiled **B.** interpreted

C. procedural **D.** object-oriented

72. A blueprint for creating an object in C++ is called _____

A. a class

B. an instance

C. a map

D. a pattern

E. a sketch

73. The most common operation used in constructors is _____

A. addition **B.** overloading

C. assignment **D.** polymorphism

74. When a function performs tasks based on a decision, it has _____

A. functional cohesion

B. coincidental cohesion

C. logical cohesion

D. no cohesion

75. To create a template class, you begin with _____

A. the template definition

B. the keyword class

C. the function definitions

D. the keyword definition

76. Which of the following is false?

A. Data stored in an array can be accessed faster than data stored in a disk file

B. Data stored in an array needs to be entered only once, typically at the beginning of the program

C. Arrays allow the programmer to store information in the computer's internal memory

D. When using arrays, you will have fewer variable names to remember

E. None of the preceding statements are false

77. A variable's _____ indicates which portions of the program can use the variable

A. area

B. extent

C. lifetime

D. reach

E. scope

78. If an integer object is thrown with a throw statement, then a subsequent catch block has a usable match if the type of the catch argument is _____

A. const int &

B. int &

C. either (a) or (b)

D. neither (a) nor (b)

79. If no constructors can specified for a derived class, objects of the derived class will use the constructors in the base class

A. True **B.** False

80. The get() function returns _____

A. a character

B. void

C. a reference to the object that invoked it

D. a copy of the object that invoked it

81. The most efficient data type for a variable that the number 20000 is the _____ data type

A. Character

B. Double

C. Float

D. Long Integer

E. Short Integer

82. The number 5.5e3 is a _____ constant

A. character literal

B. named literal

C. numeric literal

D. string literal

83. The compiler determines the type used in a template function via _____

A. the name of the function

B. the first variable declared within the function

C. the type of the argument passed to the function

D. the type of the value returned from the function

84. Which of the following is false?

A. A pointer variable contains the address of a variable in memory

B. You should both declare and initialize a pointer before you use it

C. Pointers are typically initialized to the empty string ("")

D. A pointer's datatype must match the datatype of the variable to which it points

E. A pointer variable is typically referred to simply as a pointer

85. In C++, the address operator is the following symbol _____

A. >> **B.** &

C. * **D.** !

86. Any #include files may contain

A. constants

B. variables

C. functions

D. All of the above

87. Which of the following are valid characters for a numeric literal constant?

A. a decimal point

B. the letter e

C. a minus sign

D. a plus sign

E. All of the above

88. When a break statement is used in a loop, the control skips the rest of the statements in

the loop after it and jumps

A. to the last lines in the program

B. to the next statement written after the body of the loop

C. to the first statement in the body of the loop

D. All. of the above

E. None of the above

89. The function that takes arguments to set the bits of count is _____

A. setf()

B. bitsef()

C. ios()

D. flag()

90. When two types are used in a function template and one is labeled T, the other

A. must also be named T

B. must be named U

C. can be any legal C++ identfier

D. it is illegal to have two types

91. The actual arguments cannot be

A. a constant or a variable

B. of a different type from the corresponding formal arguments

C. other functions

D. expressions

E. None of the above

92. A predefined function that may be used to handle memory allocation errors is

A. handle_error

B. set_new_handler

C. new_fix

D. memory_error

93. A function in a derived class that has the same name as a function in the parent class _____

A. will cause an error message to display

B. will override the base class function

C. will be overridden by the base class function

D. will execute immediately after the base class function executes

94. The comma operator (,) is primarily used in conjunction with

A. 'for' statement

B. 'if-else' statement

C. 'do-while' statement

D. All of the above

E. None of the above

95. To execute a C++ program, you first need to translate the source code into object code. This process is called

A. coding **B.** compiling

C. sourcing **D.** translating

96. The rules of a programming language are called its _____

A. code **B.** guidelines

C. procedures **D.** regulations

E. syntax

97. An array element is accessed using

A. a first-in-first-out approach

B. the dot operator

C. a member name

D. an index number

98. The program can access the private members of a class

A. directly

B. only through other private members of the class

C. only through other public members of the class

D. None of the above - the program cannot access the private members of a class in any way

99. The pow and sqrt functions return a(n) _____ type number

A. double **B.** float

C. integer **D.** long

E. short

100. The generic name used for unexpected errors that occur during the execution of a program is

A. infractions **B.** exceptions

C. deviations **D.** anomalies

101. You add the desired type to a specific template class instantiation by placing the type's name _____

A. between angle brackets

B. in parentheses

C. on a line by itself

D. immediately prior to the class name

102. Programmer-defined functions can be

A. value-returning functions only

B. void functions only

C. either value-returning or void functions

103. A class D can be derived from a class C, which is derived from a class B, which is derived from a class A

A. True **B.** False

104. To use the strcpy function, you must include the _____ header file in your program

A. assign.h **B.** copy.h

C. string.h **D.** strcopy.h

105. The number of the relational operators in the C language is

A. four

B. six

C. three

D. one

E. None of the above

106. Which of the following tells C++ to display numbers with two decimal places?

A. setdecimal(2) **B.** setiosflags(2)

C. setiosflags(2.00) **D.** setprecision(2)

107. The main difference in operation between an 'if statement and a 'while' statement is

A. the 'while' loop body is executed

B. the body of the 'while' statement may be executed many times, the body of the 'if statements only once

C. the conditional expression following the keyboard is evaluated differently

D. All of the above

E. None of the above

108. If a class object is thrown with a throw statement, then a subsequent catch block has a usable match if the type of the catch argument is_____

A. a parent class of the thrown class

B. a child class of the thrown class

C. either (a) or (b)

D. neither (a) nor (b)

109. The weakest form of cohesion is

A. coincidental **B.** functional

C. logical **D.** communicational

110. The 'continue' statement is used to

A. permit two different expressions to appear in situations where only one expression would ordinarily be used

B. terminate loops or to exit from a switch

C. alter the normal sequence of program execution by transferring control to some other part of the program

D. All of the above

E. None of the above

111. The 'break' statement is used to exist from

A. a do loop

B. a for loop

C. a switch statement

D. All of the above

E. None of the above

112. A function whose purpose is to send messages to other functions is known as a _____

A. dispatcher **B.** courier

C. messenger **D.** sender

113. With commercial classes, the function source code is usually_____

A. printed on high-quality paper

B. poorly written

C. provided on a disk

D. provided in object form

114. The type of value that a function sends back to the function that calls it is known as its _____

A. type

B. return value

C. reference data

D. sentinel

115. Assume that a program includes the short *agePtr = NULL; statement. The name of the pointer is _____

A. *agePtr **B.** agePtr

116. Which of the following are never inherited?

A. public data members

B. constructor functions

C. void functions

D. overloaded + operators