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தருப்பனந்தாள் - 612504

**S.K.S.S ARTS COLLEGE, THIRUPPANANDAL - 612504**



## QUESTION BANK

Title of the Paper

# PROGRAMMING IN C++

Course: I B.Sc. (CS)

Sub. Code: 16SCCS2

Semester: II

Prepared by



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**CORE COURSE II**

**PROGRAMMING IN C++**

***Unit I***

Basic Concepts of Object- Oriented Programming - Benefits of OOP - Object Oriented Languages - Applications of OOP – Structure of C++ Program - Tokens, Expressions and Control Structures – Functions inC++

***Unit II***

Classes and Objects – Constructors and Destructors –Operator Overloading and TypeConversions

***Unit III***

Inheritance : Extending Classes – Pointers - Virtual Functions and Polymorphism

***Unit IV***

Managing Console I/O Operations – Working with Files – Templates – ExceptionHandling

***Unit V***

Standard Template Library – Manipulating Strings – Object Oriented Systems Development



**UNIT – I**

**Choose the Correct Answer**

1. Wrapping data and its related functionality into a single entity is known as \_\_\_\_\_
  - a) Abstraction
  - b) Encapsulation
  - c) Polymorphism
  - d) Modularity
  
2. How structures and classes in C++ differ?
  - a) In Structures, members are public by default whereas, in Classes, they are private by default
  - b) In Structures, members are private by default whereas, in Classes, they are public by default
  - c) Structures by default hide every member whereas classes do not
  - d) Structures cannot have private members whereas classes can have
  
3. What does polymorphism in OOPs mean?
  - a) Concept of allowing overriding of functions
  - b) Concept of hiding data
  - c) Concept of keeping things in different modules/files
  - d) Concept of wrapping things into a single unit
  
4. Which concept allows you to reuse the written code?
  - a) Encapsulation
  - b) Abstraction
  - c) Inheritance
  - d) Polymorphism
  
5. Which of the following shows multiple inheritances?
  - a) A->B->C
  - b) A->B; A->C
  - c) A,B->C
  - d) B->A
  
6. The data elements in the structure are also known as what?
  - a) Objects
  - b) Members
  - c) data
  - d) objects & data
  
7. 0946, 786427373824, 'x' and 0X2f are \_\_\_\_\_ and \_\_\_\_\_ literals respectively.
  - a) decimal, character, octal, hexadecimal
  - b) octal, hexadecimal, character, decimal
  - c) hexadecimal, octal, decimal, character
  - d) octal, decimal, character, hexadecimal

8. What will be used when terminating a structure?

- a) :
- b) }
- c) ;
- d) ;;

9. Which of the following is the default return value of functions in C++?

- a) int
- b) char
- c) float
- d) void

10. 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

**Answers:** 1.b 2.a 3.a 4.c 5.c 6.b 7.d 8.c 9. a 10.b

**Short Questions (2 Marks)**

- 11. What are the Concepts of OOPs
- 12. Differentiate Procedure Oriented Programming (POP) and Object Oriented Programming (OOP)
- 13. Define Tokens
- 14. What are the Data Types in C++
- 15. Write the Block Structure of C++
- 16. What are the Operators in C++
- 17. What is expression? What are the expressions in C++?
- 18. What is function? What are the types of Function in C++
- 19. What are the Features of Inline Function?
- 20. What are the components of Function?

**Paragraph Questions (5 Marks)**

- 21. What are the difference between C and C++? Explain
- 22. Describe the console I/O Command in C++ With example.
- 23. Explain the benefits of OOPS concepts.
- 24. Explain the basic data types in C++.
- 25. Write a C++ program to find the sum of n given numbers
- 26. What is polymorphism? Explain
- 27. Explain the structure of a declaration in C++

28. Write a C++ program that will ask for temperature in celcius and displays in fahrenheit
29. What is a function? Explain
30. Explain the features or concepts of Object-oriented programming (OOP)?

**Essay Type Questions (10 Marks)**

31. Explain how the objects are used in the arrays and functions
32. Discuss overloading binary operator with example
33. Discuss about the benefits of oops
34. Explain the control structures in C++ With example
35. What is Object Oriented Paradigm? Explain the various features of Object Oriented Programming.
36. List the principles of object oriented programming
37. Discuss in detail the merits and demerits of OOPS.
38. Discuss friend functions with example program
39. Write a program to print 'A' to 'Z' three times using for loop, while loop and do-while loop.
40. Describe the fundamental concepts of objected oriented programming.

**UNIT - II**

**Choose the Correct Answer**

1. Which category of data type a class belongs to?
  - a) Fundamental data type
  - b) Derived data type
  - c) User defined derived data type
  - d) Atomic data type
2. Inline functions are avoided when \_\_\_\_\_
  - a) function contains static variables
  - b) function have recursive calls
  - c) function have loops
  - d) all of the mentioned
3. What is the role of a constructor in classes?
  - a) To modify the data whenever required
  - b) To destroy an object
  - c) To initialize the data members of an object when it is created
  - d) To call private functions from the outer world
4. What is a copy constructor?
  - a) A constructor that allows a user to move data from one object to another
  - b) A constructor to initialize an object with the values of another object
  - c) A constructor to check the whether to objects are equal or not
  - d) A constructor to kill other copies of a given object.
5. How many Destructors are allowed in a Class?
  - a) 1
  - b) 2
  - c) 3

- d) Any number
6. 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
7. 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){}
8. What is a binary operator?  
a) Operator that performs its action on a single operand  
b) Operator that performs its action on two operand  
c) Operator that performs its action on three operand  
d) Operator that performs its action on any number of operands
9. What is the return type of the conversion operator?  
a) void  
b) int  
c) float  
d) no return type
10. How many parameters does a conversion operator may take?  
a) 0  
b) 1  
c) 2  
d) 3

**Answers:** 1.c 2. d 3. c 4.b 5.a 6.d 7.a 8.b 9. d 10.a

**Short Questions (2 Marks)**

11. Define Class?  
12. What are the Access specifiers in C++?  
13. What is Static Variables?  
14. Define Constructor  
15. Define Destructor  
16. Define constructor overloading  
17. What is order of constructor and destructor?  
18. What is meant by parameterized constructors?  
19. What is meant by copy constructors?  
20. What is operator overloading?

**Paragraph Questions (5 Marks)**

21. Explain briefly the purpose of using new and delete operator in C++ Program
22. Discuss about constructors with example
23. Summarise the rules for overloading operators.
24. Distinguish between function overloading and overriding
25. What are the advantages of using constructor and destructor ?
26. Specify the arithmetic, relational and logical operations in C++
27. With suitable example illustrate the use of objects as function arguments in detail.
28. Write about the type conversions.
29. What is Constructor Overloading? Explain
30. List and explain the different types of constructor with an example

**Essay Type Questions (10 Marks)**

31. Explain briefly the usage of constructors and destructors with example
32. Discuss overloading binary operator with example
33. Discuss the method of overloading unary operator in C++ with an example.
34. Explain the following : (a) Array of objects. (5) (b) Type conversion. (5)
35. Explain the parameterised constructor with example.
36. Explain how base class constructors are used in the derived class with suitable example.
37. What is operator overloading? Write a C++ program to overload '+' and '-' operators to find the sum and difference of two time values given in HH:MM:SS format.
38. What is destructor? Explain its use
39. Explain function overloading with an example.
40. Describe in detail about how to define classes and objects with example

**UNIT –III**

**Choose the Correct Answer**

1. What is Inheritance in C++?
  - a) Wrapping of data into a single class
  - b) Deriving new classes from existing classes
  - c) Overloading of classes
  - d) Classes with same names
2. How many specifiers are used to derive a class?
  - a) 1
  - b) 2
  - c) 3
  - d) 4
3. What is the order of Constructors call when the object of derived class B is declared, provided class B is derived from class A?
  - a) Constructor of A followed by B
  - b) Constructor of B followed by A
  - c) Constructor of A only
  - d) Constructor of B only

4. What is the order of Destructors call when the object of derived class B is declared, provided class B is derived from class A?

- a) Destructor of A followed by B
- b) Destructor of B followed by A
- c) Destructor of A only
- d) Destructor of B only

5. . Which is referred by pointers to member?

- a) Static members of class objects
- b) Non-static members of class objects
- c) Referring to whole class
- d) Dynamic members of class objects

6. What should be used to point to a static class member?

- a) Smart pointer
- b) Dynamic pointer
- c) Normal pointer
- d) Static pointer

7. Which of the following is a static polymorphism mechanism?

- a) Function overloading
- b) Operator overloading
- c) Templates
- d) All of the mentioned

8. What does the following statement mean?

```
int (*fp)(char*)
```

- a) pointer to a pointer
- b) pointer to an array of chars
- c) pointer to function taking a char\* argument and returns an int
- d) function taking a char\* argument and returning a pointer to int

9. The operator used for dereferencing or indirection is \_\_\_\_\_

- a) \*
- b) &
- c) ->
- d) -->>

10. Which of the following is illegal?

- a) int \*ip;
- b) string s, \*sp = 0;
- c) inti; double\* dp = &i;



d) `int *pi = 0;`

**Answers:** 1. b    2. c    3. a    4. b    5. b    6. c    7. c    8. d    9. a    10. c

**Short Questions (2 Marks)**

11. Define inheritance
12. What are types of inheritance
13. What are visibility modes of inheritance
14. How can you define member functions in C++?
15. What is meant by Hybrid Inheritance?
16. What is meant by Multipath Inheritance?
17. Define virtual base class
18. Define virtual function
19. How can you access the virtual functions
20. What is a conversion function? How it is created? Explain its Syntax

**Paragraph Questions (5 Marks)**

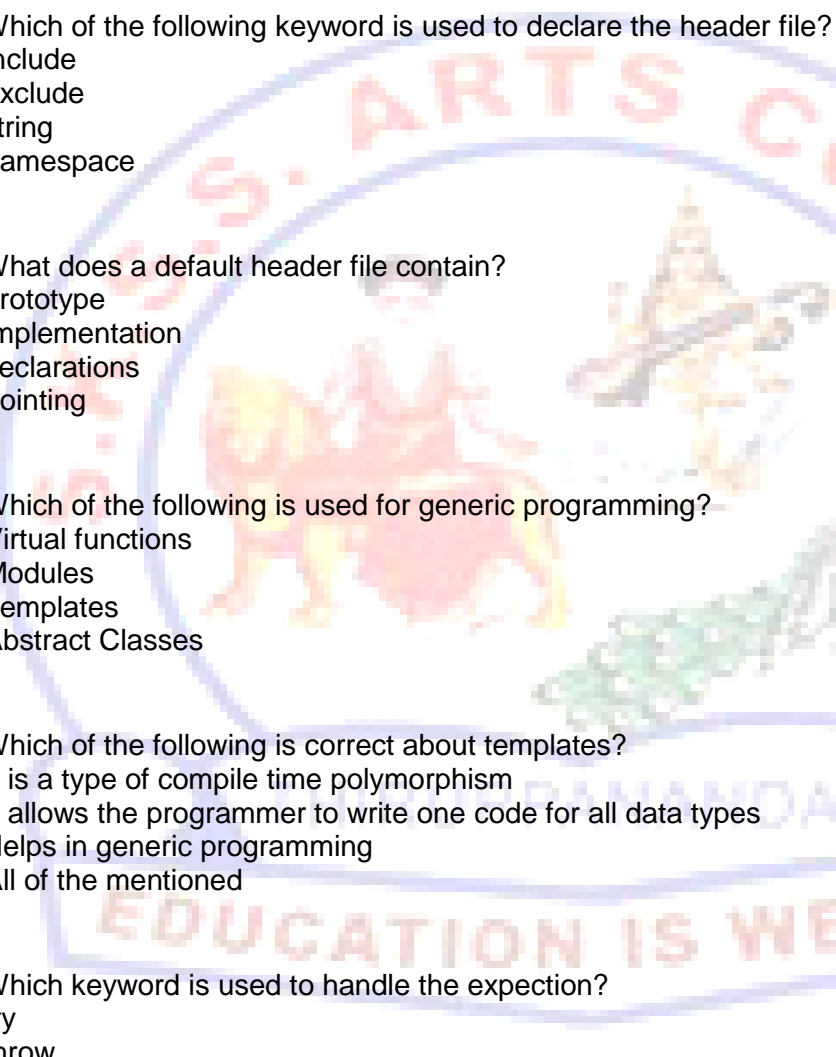
21. Discuss the public inheritance with example
22. What is virtual base class? Explain virtual base class with example
23. Explain multiple inheritance with example.
24. Briefly describe the concept of single inheritance.
25. Write a C++ program to check whether the given number is prime or not
26. What is pointer? Explain with an example.
27. Explain the concept of multiple inheritance with an example
28. Explain the role of 'this' and 'super' pointers with examples.
29. Discuss in detail pure virtual function with an example.
30. Explain about hybrid inheritance

**Essay Type Questions (10 Marks)**

31. Discuss :
  - a) Hierarchical inheritance.
  - b) Multipath inheritance.
32. What is inheritance and what are the advantages of inheritance?
33. Explain virtual class, virtual base class and abstract class in detail.
34. What is polymorphism in C++ with example?
35. What is meant by dynamic initialization of objects and why it is needed? Explain how dynamic initialization is achieved in C++ with suitable example.
36. Explain the method of accessing an object through pointer with an example C++ program.
37. What is unique about the pointer?
38. State the rules of virtual functions
39. Explain the concepts of Inheritance with types and sample program.
40. Explain the virtual functions in detail with an example.

**UNIT – IV**

**Choose the Correct Answer**

1. What is the user-defined header file extension in c++?
    - a) cpp
    - b) h
    - c) hf
    - d) hg
  
  2. Which of the following keyword is used to declare the header file?
    - a) include
    - b) exclude
    - c) string
    - d) namespace
  
  3. What does a default header file contain?
    - a) prototype
    - b) implementation
    - c) declarations
    - d) pointing
  
  4. Which of the following is used for generic programming?
    - a) Virtual functions
    - b) Modules
    - c) Templates
    - d) Abstract Classes
  
  5. Which of the following is correct about templates?
    - a) It is a type of compile time polymorphism
    - b) It allows the programmer to write one code for all data types
    - c) Helps in generic programming
    - d) All of the mentioned
  
  6. Which keyword is used to handle the exception?
    - a) try
    - b) throw
    - c) catch
    - d) handler
  
  7. Which is used to throw a exception?
    - a) throw
    - b) try
    - c) catch
- 

d) handler

8. What is an exception in C++ program?

- a) A problem that arises during the execution of a program
- b) A problem that arises during compilation
- c) Also known as the syntax error
- d) Also known as semantic error

9. Why do we need to handle exceptions?

- a) To avoid unexpected behaviour of a program during run-time
- b) To let compiler remove all exceptions by itself
- c) To successfully compile the program
- d) To get correct output

10. How Exception handling is implemented in the C++ program?

- a) Using Exception keyword
- b) Using try-catch block
- c) Using Exception block
- d) Using Error handling schedules

**Answers:** 1. b 2. a 3. c 4. c 5. d 6. c 7. a 8. a 9. a 10. b

**Short Questions (2 Marks)**

- 11. What are the unformatted I/O Operations?
- 12. Differentiate Get() and Put() member functions
- 13. Differentiate Getline() and Putline member functions
- 14. What is meant by pure abstract class?
- 15. What is meant by concrete class
- 16. What are the IOS format functions
- 17. Define file
- 18. Differentiate file input stream and file output stream
- 19. What are operations on file
- 20. What is meant by Reusability?

**Paragraph Questions (5 Marks)**

- 21. Explain opening and closing a file in C++.
- 22. Explain Exception handling in C++.
- 23. Describe briefly the features of I/O system supported by C++.
- 24. How do the I/O facilities in C++ differ from that in C?
- 25. What is the basic difference between manipulators and ioa member functions in implementation? Give examples.
- 26. How do you handle error during file operations?
- 27. Describe the various approaches by which we can detect the end-of- file condition successfully.

28. Describe briefly about how to open and close a file.
29. Discuss in detail about command line argument.
30. What is file mode? Describe various file mode options available in C++.

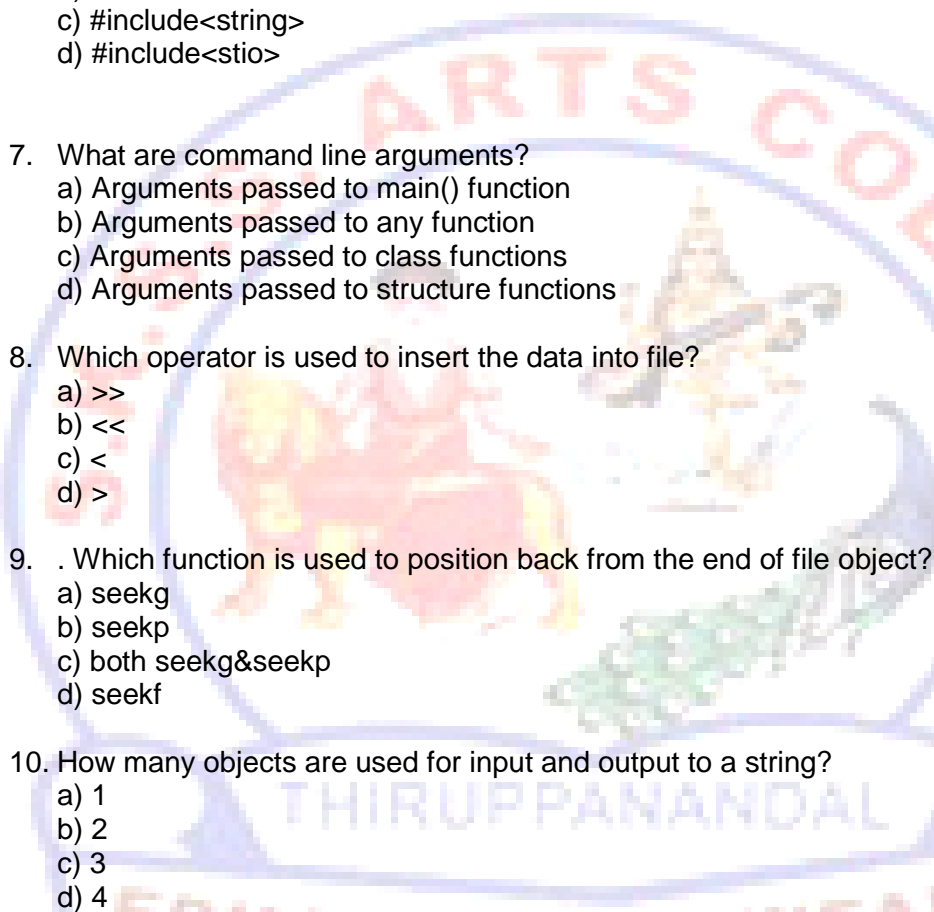
**Essay Type Questions (10 Marks)**

31. Write a program that reads a text file and copy onto another file.
32. Describe various input and output functions related to file operation.
33. Write a C++ program to read and display the content of a text file.
34. What is exception handling explain with example?
35. Explain file management
36. Discuss about the random access file
37. Discuss the various file stream classes needed for file manipulation
38. Explain the formatted I/O operations with example.
39. Discuss about Function Template
40. Describe various input and output functions related to file operation.

**UNIT – V**

**Choose the Correct Answer**

1. What is the Standard Template Library?
  - a) Set of C++ template classes to provide common programming data structures and functions
  - b) Set of C++ classes
  - c) Set of Template functions used for easy data structures implementation
  - d) Set of Template data structures only
2. What are the containers?
  - a) Containers store objects and data
  - b) Containers stores all the algorithms
  - c) Containers contain overloaded functions
  - d) Containers contain set of Iterators
3. How many Associative Containers are provided by C++?
  - a) 2
  - b) 3
  - c) 4
  - d) 5
4. What are Container Adaptors?
  - a) Containers that implements data structures which can be accessed sequentially
  - b) Containers that implements sorted data structures for fast search in  $O(\log n)$
  - c) Containers that implements unsorted(hashd) data structures for quick search in  $O(1)$
  - d) Containers that provide a different interface for sequential containers

5. How many types of representation are in the string?
    - a) 1
    - b) 2
    - c) 3
    - d) 4
  
  6. What is the header file for the string class?
    - a) #include<ios>
    - b) #include<str>
    - c) #include<string>
    - d) #include<stio>
  
  7. What are command line arguments?
    - a) Arguments passed to main() function
    - b) Arguments passed to any function
    - c) Arguments passed to class functions
    - d) Arguments passed to structure functions
  
  8. Which operator is used to insert the data into file?
    - a) >>
    - b) <<
    - c) <
    - d) >
  
  9. . Which function is used to position back from the end of file object?
    - a) seekg
    - b) seekp
    - c) both seekg&seekp
    - d) seekf
  
  10. How many objects are used for input and output to a string?
    - a) 1
    - b) 2
    - c) 3
    - d) 4
- 

**Answers:**1. a 2. a 3. c 4.d 5.b 6.c 7.a 8.b 9. a 10. c

**Short Questions (2 Marks)**

11. What is STL?
12. What are three components of STL
13. What is string manipulation?
14. What do you mean by sequential access ?
15. What do you mean by random access ?
16. What is the need of Templates? Explain.
17. Explain about function templates?
18. Explain in detail about the facilities available for substring operations on the string object?

19. Explain in detail about Adapted Containers.
20. How can we determine errors while dealing with files.

**Paragraph Questions (5 Marks)**

21. Explain the put() and get() functions with examples
22. Explain the random access method with examples
23. What is a Standard Template Library (STL)? What are the various types of STL Containers?
24. What is an Iterator class?
25. What is the difference between an External Iterator and an Internal Iterator? Describe an advantage of the External Iterator.
26. What is string manipulation? Explain
27. How do you break a sentence into words in C++?
28. How can I compare two strings in C++?
29. What is object oriented system development?
30. Why C++ is an object oriented programming?

**Essay Type Questions (10 Marks)**

31. Explain briefly the exception handling in object oriented programming
32. How to resolve conflicts in naming between multiple parent classes if they are called from a child?
33. Why a template class must be written in one single file? Explain
34. Explain memory leakage in C++
35. Discuss about cascaded operators work?
36. What is a scope resolution operator mean?
37. Can an object be returned from a stand-alone function, how?
38. What is a forward declaration, give an example?
39. What is a circular reference/dependency among classes?
40. Explain prevent multiple inclusions of the same header file in a project?

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