

Note:

1. All questions are compulsory with Internal choice.
2. Draw neat diagrams wherever necessary.
3. Figures to the right indicate full marks.

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- Q.1 Answer the following (any THREE) (15)**
- (a) Explain class and object with neat diagram.
 - (b) Write a note on operators used in C++.
 - (c) Explain goto statement with its syntax and example.
 - (d) Write a C++ program to find the area of a square and rectangle.
 - (e) Write a C++ program to find the given number is even or odd.
 - (f) Write a C++ program to find the greatest number among three.
- Q.2 Answer the following (any THREE) (15)**
- (a) What is single dimensional array? Explain in brief.
 - (b) Explain call by reference parameters with suitable example.
 - (c) Explain static function with appropriate example.
 - (d) Write a note on destructor. State its rules to define destructor.
 - (e) Write a short note on scope resolution operator.
 - (f) Write a C++ program using classe and object Student to print name of the student, roll_no. Display the same.
- Q.3 Answer the following (any THREE) (15)**
- (a) Explain hybrid inheritance with suitable example.
 - (b) Write a C++ program to describe the concept of "this" pointer.
 - (c) What is pure virtual function? How it implements dynamic binding?
 - (d) Write a C++ program to design a class representing the information regarding digital library (books, tape: book & tape should be separate classes having the base class as media). The class should have the functionality for adding new item, issuing, deposit etc. the program should use the runtime polymorphism
 - (e) Write a program to describe virtual class concept.
 - (f) Write a C++ program to maintain the records of book with details (Name and publisher) . The program must use pointer object to return the result.
- Q.4 Answer the following (any THREE) (15)**
- (a) Explain the file stream classes used for the file manipulation.
 - (b) Explain seekp() and tellp() functions used for file management.
 - (c) How to detect the end of file using function?
 - (d) Explain try-cath-throw with an example.
 - (e) Write a C++ program to perform read/write command line arguments.
 - (f) Write a C++ program to implement the exception handling with rethrowing in Exception.
- Q.5 Answer the following (any THREE) (15)**
- (a) Explain iterators and its types.
 - (b) Explain in brief Adaptor and Singleton design patterns.

- (c) Write a note on LinkedList class with appropriate example.
- (d) Explain bool and wchar_t data types used in ANSI C++.
- (e) Write a C++ program using insert() and append() function in string objects.
- (f) Write a C++ program to add the data in ArrayList class.

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