Practical Exam

DIV A

1. A book shop maintains the inventory of books that are being sold at the shop. The list includes details such as author, title, price, publisher and stock position. Whenever a customer wants a book, the sales person inputs the title and author and the system searches the list and displays whether it is available or not. If it is not, an appropriate message is displayed. If it is, then the system displays the book details and requests for the number of copies required. If the requested copies book details and requests for the number of copies required. If the requested copies are available, the total cost of the requested copies is displayed; otherwise the message “Required copies not in stock” is displayed. Design a system using a class called books with suitable member functions and Constructors. Use new operators in constructors to allocate memory space required. Implement C++ program for the system.

   Improve the system design to incorporate the following features:

   - The price of the books should be updated as and when required. Use a member function to implement this.
   - The stock value of each book should be automatically updated as soon as a transaction is completed.
   - The number of successful and unsuccessful transactions should be recorded for the purpose of statistical analysis. Use static data members to keep count of transactions.
   - Also demonstrate the use of pointers to access the members.
2. Define a predicate memCount (AList, BList, Count) that is true if AList occurs Count times within BList. Define without using an accumulator.
   Examples: memCount (a,[b,a], N).
   N = 1;
   no
   memCount (a, [b, [a, a, [a], c], a], N).
   N = 4;
   no