Question 1:

12 marks

Define a class for rational numbers. A rational number is a number that can be represented as the quotient of two integers. For example, 1/2, 3/4, 64/2, and so forth are all rational numbers. (By 1/2 and so on we mean the everyday fraction, not the integer division this expression would produce in a C++ program.). Represent rational numbers as two values of type int, one for the numerator and one for the denominator. Call the class Rational.
Include a constructor with two arguments that can be used to set the member variables of an object to any legitimate values. Also include a constructor that has only a single parameter of type int ; call this single parameter whole Number and define the constructor so that the object will be initialized to the rational number whole Number /1. Include a default constructor that initializes an object to 0 (that is, to 0/1).
Overload the input and output operators >> and <<. Numbers are to be input and output in the form 1/2 , 15/32 , 300/401 , and so forth. Note that the numerator, the denominator, or both may contain a minus sign, so -1/2, 15/-32, and -300/-401 are also possible inputs. Overload all the following operators so that they correctly apply to the type Rational: ==, <, <=, >, >=, +, -, *, and /.
Write a test program to test your class.

OR

Create a class InputFile. Write a member function in class that reads an input text file's contents and stores them in an string data member. Every object of class InputFile would open different text files accordingly. Overload operator- for InputFile class. Overloaded operator- should eliminate all the same words in both input files from invoking object's input file.
For Example:

File1.txt	File2.txt
This is one line of text	This is one line text

InputFile obj1 opens and read first text file.
InputFile obj2 opens and read second file.
The statement obj1-obj2 should return an object of InputFile say, rObj, which is supposed to save in file 1:
Result: of
Note: You must design on generalize data.

8 marks

Question 2:

Write a program that keeps track of flights at an airport has a Flight class andan Airplane class. A Flight h flight number, destination, and departuredate/time. An Airplane has I.D. (sort of like a vehicle VIN that uniquelyidentifies one specific airplane), an airline name, airplane model (e.g. 747),and number

A Flight is assigned to a specific Airplane, but it can be assigned to a differentAirplane if something is wrong with the original Airplane. An Airplane can beresponsible for many different Flights. A Crew is assigned to a specific Flightand could be assigned to other Flights if they return from a completed Flight.

Question 3: 8 mar

Write a class template with generic data type array to

a) Check for palindrome.
b) Copy the contents to temp array, and print sum.
c) Show the result for following types:
   i. Double array for example: {0.178,0.24,0.35,0.46} for Palindrome would print "The given array is Not Palindrome" and for sum would print 1.228
   ii. Char array for example: {'t', 'o', 'p', 's', 'p', 'o', 't'} for Palindrome would print "The given array is Palindrome" and for sum would print "topspot".