

EASTERN UNIVERSITY, SRI LANKA  
SECOND EXAMINATION IN SCIENCE 2002/2003  
FIRST SEMESTER (June/July, 2003)  
CS 251 Practical Work on CS 201



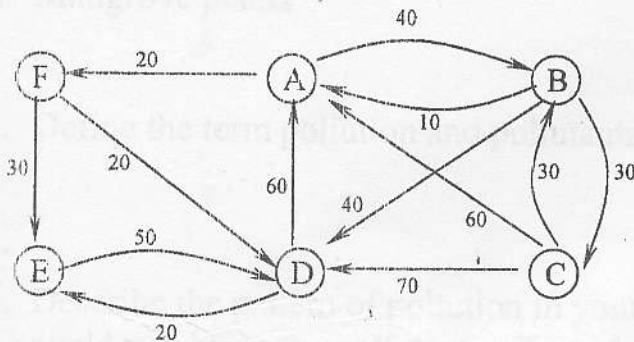
Answer either Q1 or Q2

Time : 2 Hours

{ The programs should be tested for a set of sample data and their listings and outputs should be handed over to the supervisor }

Q1 Write a C++ program to implement Dijkstra's shortest-path algorithm.

Test your program for the following graph. Display which edges become part of the shortest-path tree and in what order from the vertex A.



Q2 Implement the Node class using C++ language.

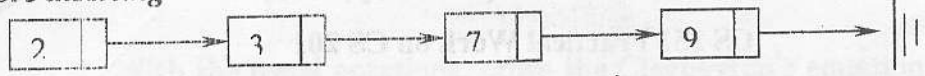
Write C++ functions to do the following tasks:

- (i) to get a new node (**GetNode**)
- (ii) to insert a node at the front of a list (**InsertFront**)
- (iii) to place a node at the rear of a list (**InsertRear**)
- (iv) to insert an item into the ordered list so that after inserting, the list is ordered

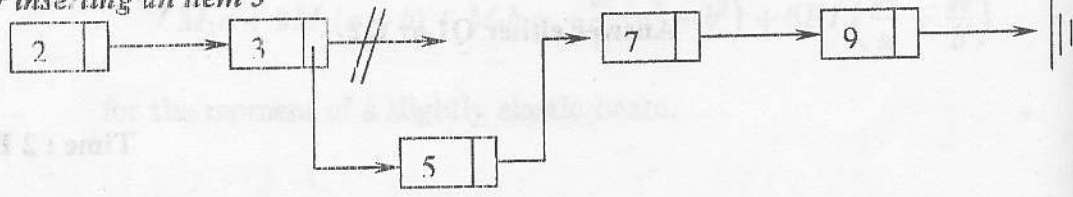
*This question continues...*

Continuation...

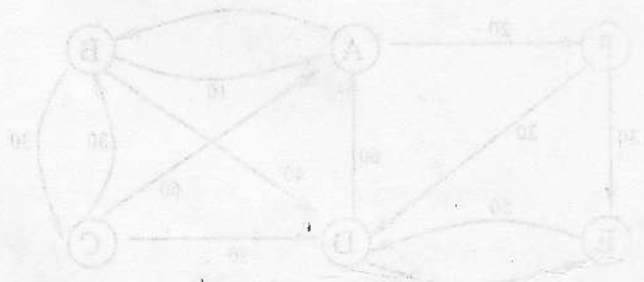
Eg: *Before inserting*



*After inserting an item 5*



Write a main program to test the above functions. Test with your own data.



Implement the Node class using C++ language.

The C++ functions to do the following tasks:

- (i) to get a new node (GetNode)
- (ii) to insert a node at the front of a list (InsertFront)
- (iii) to place a node at the rear of a list (InsertRear)
- (iv) to insert an item into the ordered list so that after inserting, the list is ordered.