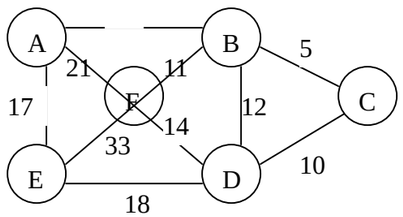
國立嘉義大學九十三學年度
資訊管理學系碩士班招生考試(乙組)試題

科目：資料結構

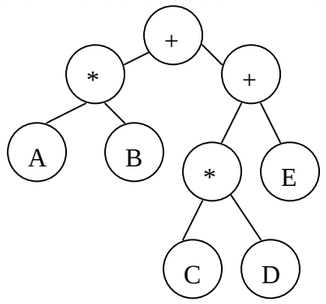
1.Given a weighted graph as follows:



(1)Please find the vertex sequence derived by DFS and BFS respectively.(10%)
(2)Please apply Kruskal's algorithm to write all steps for deriving a minimum cost spanning tree. (25%)

2.What are ADT? What are object classes? What are the similarities and differences between ADT and object classes?(15%)

3.In the figure is an ordered tree in which each node has zero or two sons.



(1)Please Draw its equivalent binary tree. (5%)
(2)Please compare and discuss the results obtained in performing binary traversal on each figure (ordered tree and its binary tree equivalent) in preorder, inorder, and postorder. (15%)

4.Please use the C language to write a push function and a pop function for a stack represented by a circular list. You should clearly define the data structure and any function you use. (20%)

5.Given a program as follows:

```
program main(in, out)
procedure p(a,b,c)
   begin
      b:=b+2;
      c:=c*a;
   end
begin
   m:=3;
   n:=4;
   p(m+n,m,m);
   print (m);
end.
```

Show the printed value, if the referencing strategy is Call-by address and Call-by name. (10%)