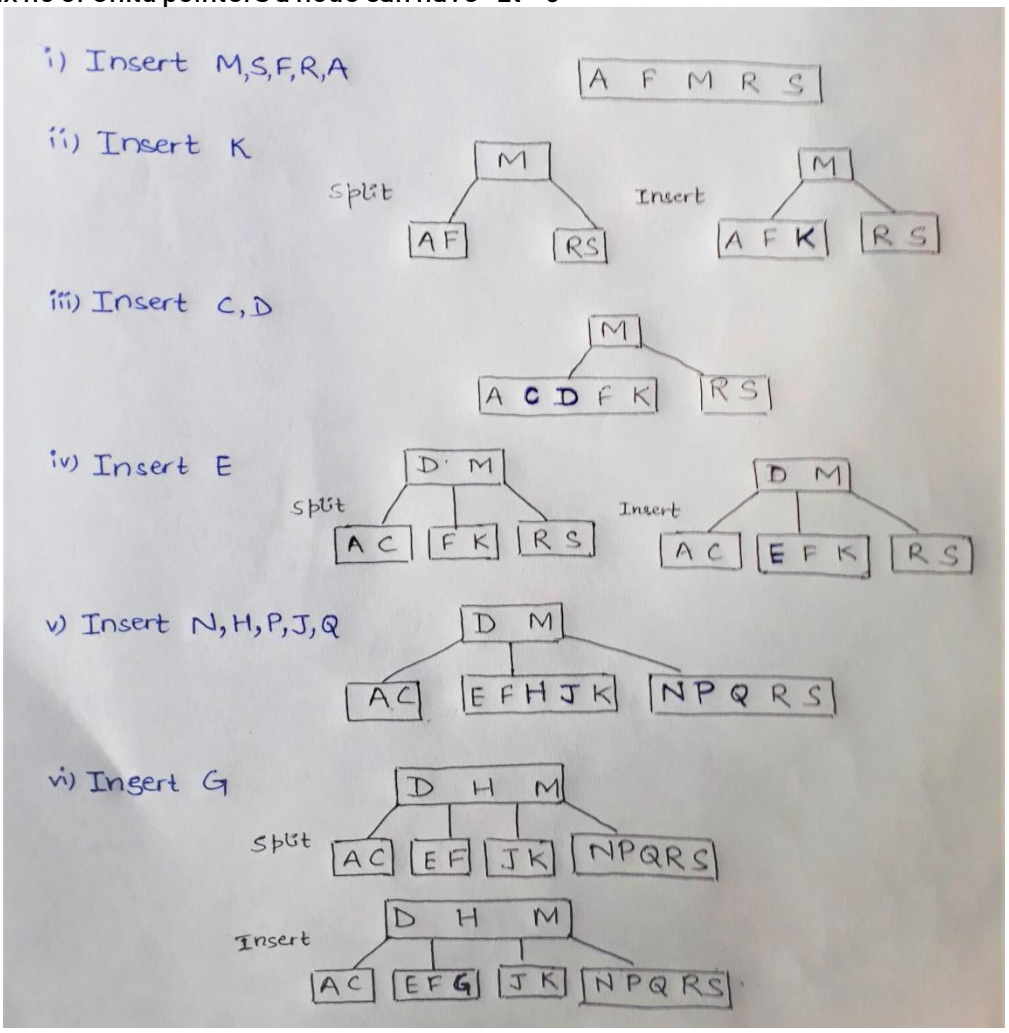
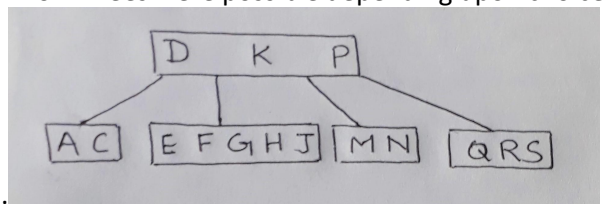
5.(a) Show the series of B-trees (with *t=3*) when inserting M,S,F,R,A,K,C,D,E,N,H,P,J,Q,G (in that order) in an empty tree. Use top down insertion. You need to only draw the trees just before and after each split.

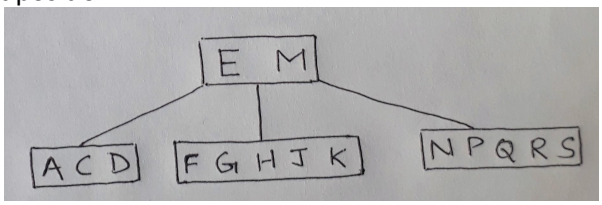
Students were expected to use Top Down Insertion Approach.
For t=3 : Max no of Keys a node can have= 2t-1= 5
Max no of Child pointers a node can have= 2t = 6



Marking Scheme:

A) 5 marks have been awarded who has shown image (i), any one of image from (ii) and (iii), any one of image from image (iv) and (v) , and final image of (vi).
B)2 marks have been awarded who has used Bottom Up Insertion approach.
Two B-Trees were possible depending upon choice of split position.





C)No marks have awarded who has assumed t=3 to be max no of keys that a node can have.