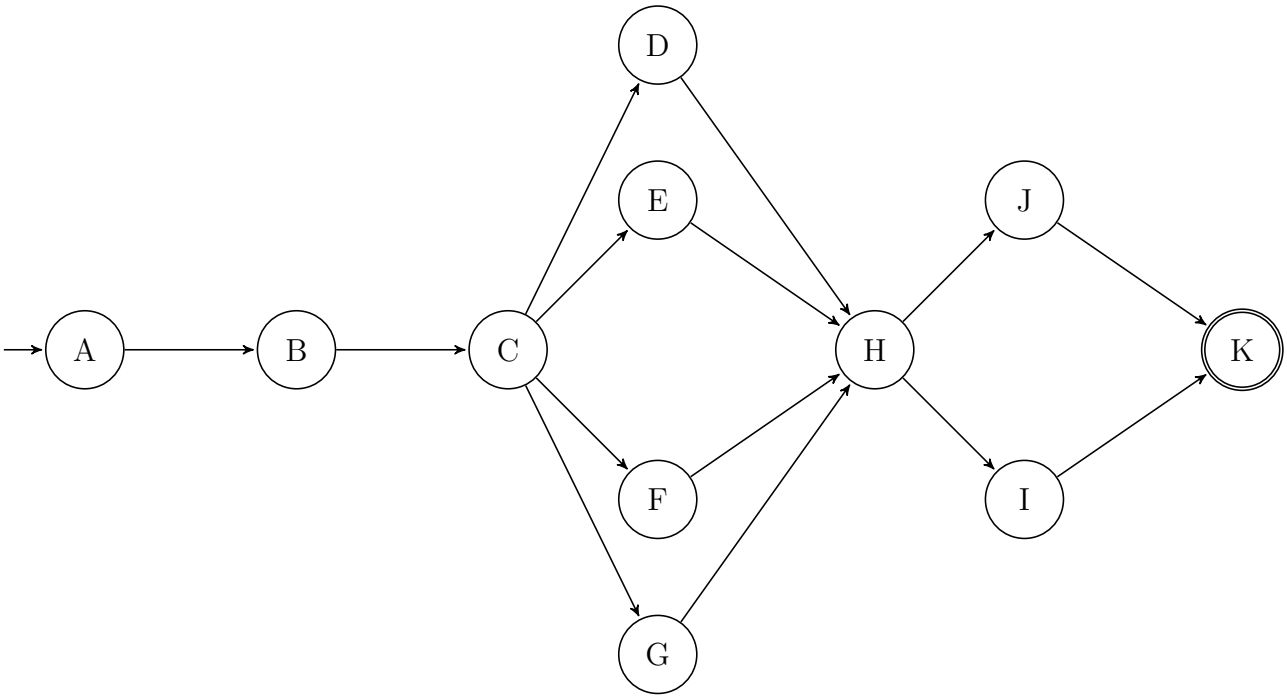
Question 3

3a

Using the minimal number of nodes (hint: 11), draw a Control Flow Graph (CFG) for method M.m() and include it in your a1 sub.pdf. The CFG should be at the level of basic blocks. See the lecture notes on Structural Coverage and CFG for examples.



3b

List the sets of Test Requirements (TRs) with respect to the CFG you drew in part (a) for each of the following coverages: node coverage; edge coverage; edge-pair coverage; and prime path coverage. In other words, write four sets: TR_{NC}, TR_{EC}, TR_{EPC}, and TR_{PPC}. If there are infeasible test requirements, list them separately and explain why they are infeasible.

T_{NC}={A, B, C, D, E, F, G, H, I, J, K}

T_{EC} = {ABC, CDH, CEH, CFH, CGH, HIK, HJK}

T_{EPC} = {AB, BC, CD, CE, CF, CG, DH, EH, FH, GH, HI, HJ, IK, JK}

T_{PPC} = {ABCDHJK, ABCDHIK, ABCEHJK, ABCEHIK, ABCFHJK, ABCFHIK, ABCDHJK, ABCDHIK, ABCGHJK, ABCGHIK}