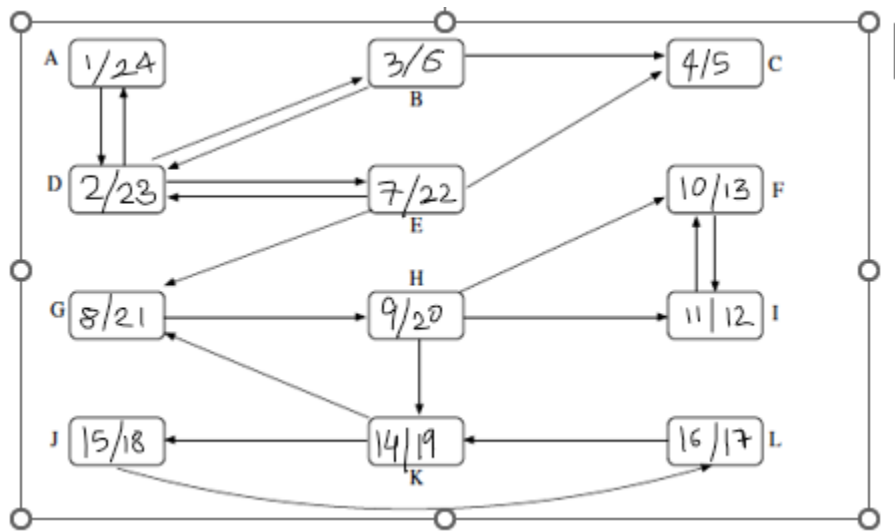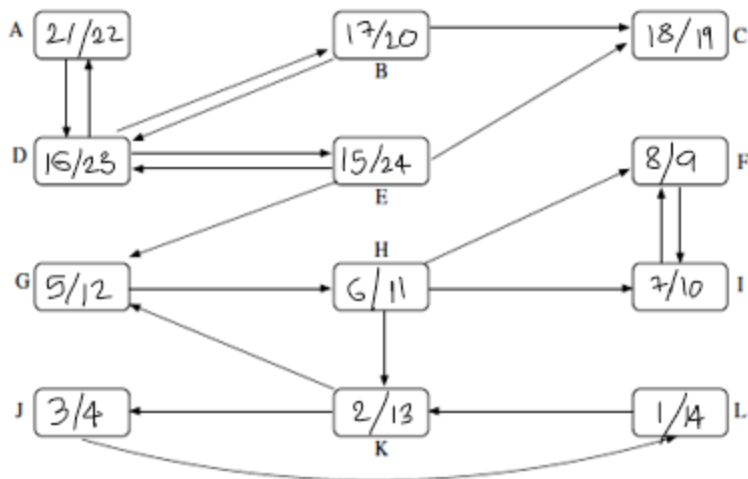Q 1 a

Tree – AD, BC, DB, DE, GH, HE, FI, HK, KJ, JL

Back Edge – BD ,DA, ED, IF, KG, LK

Forward Edge – GE, EC

Cross Edge – EC
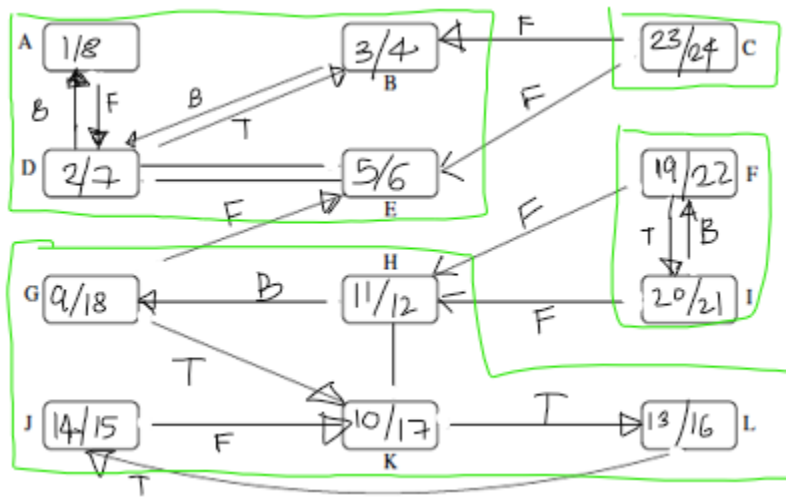
Q 1 b

Tree – ED, DB, GH, KJ, LK, KG, IF, HI, BC, DA

Back Edge – AD, BD, JL, HK, FI, DE

Forward Edge – EC, HF
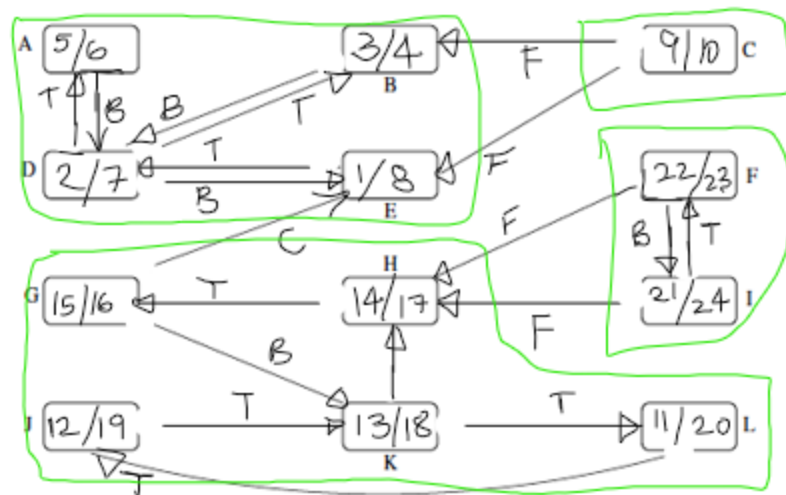
Cross Edge - EG

Q 1 c

Strong Connected Component 1 = {A, D, B, E}

Strong Connected Component 2 = {G, H, J, K, L}

Strong Connected Component 3 = {F, I}

Strong Connected Component 4 = {C}

Q 1 d

Strong Connected Component 1 = {E, D, B, A}

Strong Connected Component 2 = {L, J, K, H, G}

Strong Connected Component 3 = {I, F}

Strong Connected Component 4 = {C}

Console application output

BFS output:

0 1 2 3 5 4 7 6

DFS output:

0 1 2 5 7 3 4 6 8 9