ECE 322

SOFTWARE TESTING AND MAINTENANCE

Fall 209

Assignment #6

Due date: Friday, November 29, 2019 by 3:00 PM
(return to the appropriate box- ECE 322 A1 - 2nd floor of DICE building)

Total: 30 points

10 points

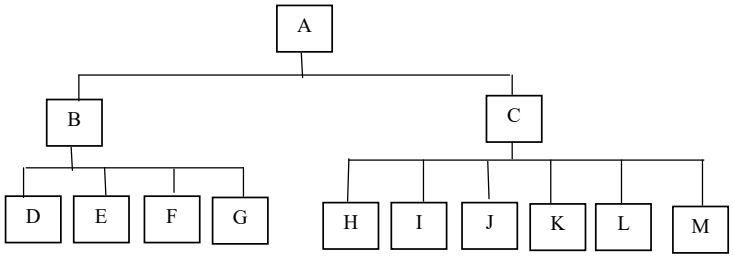
1. Fault seeding was applied to two software modules M1 and M2. In both cases there were 90 faults seeded. The cumulative numbers of seeded and indigenous faults found in each module and reported at the same time instances are given below. We claim that there are 11 indigenous faults in M1 and 15 in M2.

M1 – seeded faults found	0	1	8	9	12	15	21	49	71	87
M2-seeded faults found	2	12	30	31	32	37	45	46	49	85

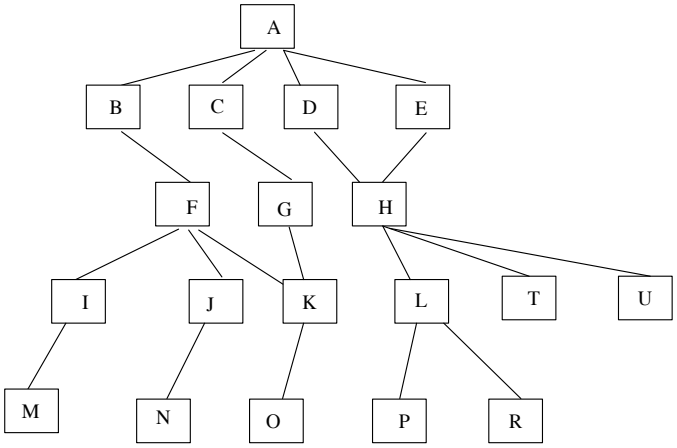
How does the confidence levels about the number of indigenous faults change over the course of testing? Plot the corresponding relationships. What percentage of seeded faults should you find to arrive at a reasonable level of confidence, say at least 0.55?

10 points

2. (a)What strategy of integration testing would you recommend for the software system whose dependency tree for the modules is shown below? The system is developed in a stable environment.



(b) The software is to be tested using a sandwich testing. Which target layer would you consider. Justify your choice.



10 points

3. What is the design complexity and integration complexity of the software described by the control flow graphs shown below. List independent integration tests.