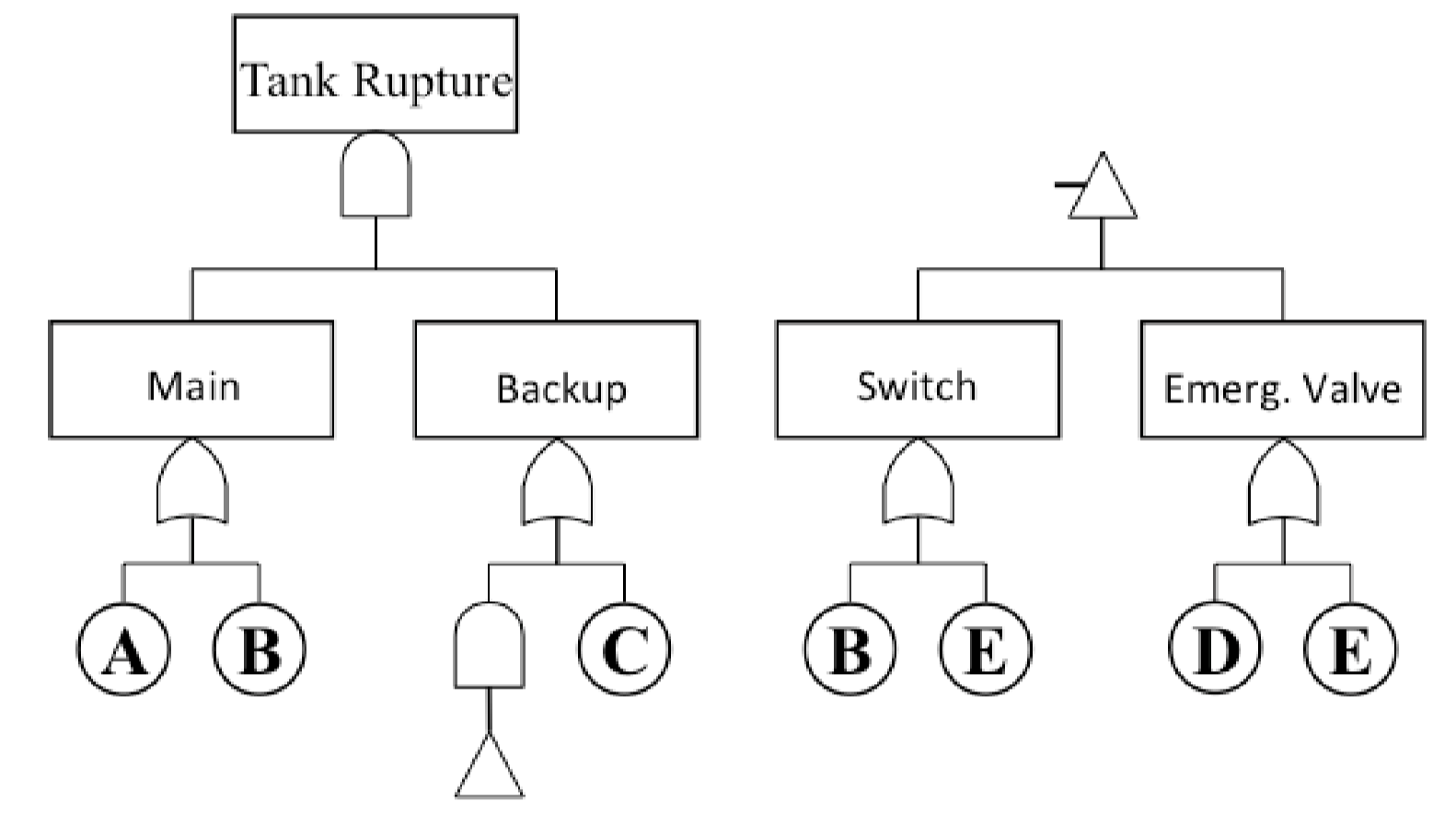
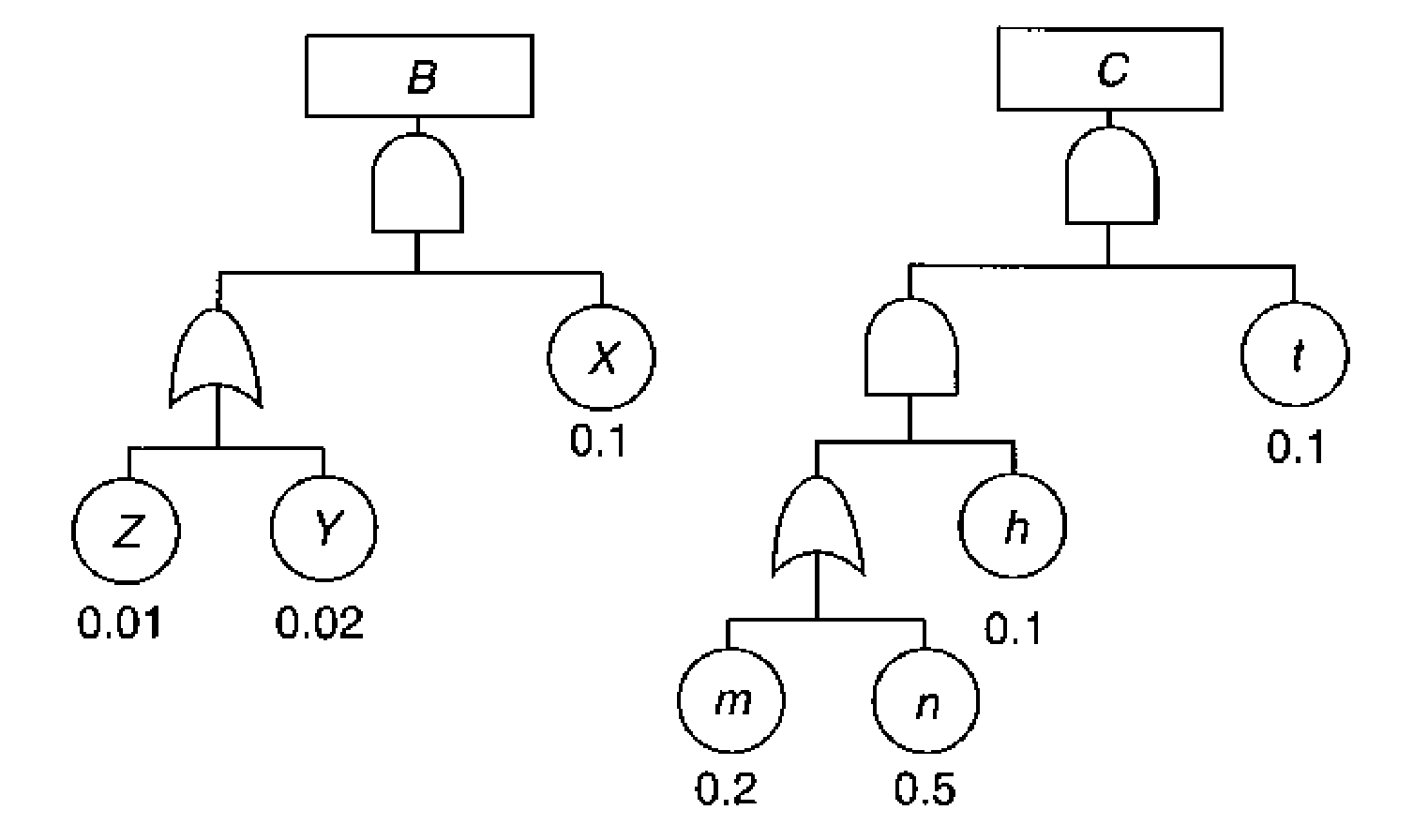
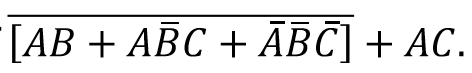
**TQ3**

1. For the fault tree given below,
2. Find the minimum cut sets
3. If the probability of each basic event is 0.10, what is the approximate top event probability? Using the minimum cut sets, what is the exact top event probability?
4. Find a set of mutually exclusive cut sets (using a BDD) and use those to calculate the exact top event probability.



1. If an accident requires occurrence of event *I* followed by event B or C so that a major consequence occurs:
2. Develop an event tree to depict all scenarios that are possible. Assume event B is triggered first.
3. If the frequency of event *I* is 0.1 per year and B and C may be obtained from the following fault tree, with probabilities assigned to each basic event, determine the frequency of each scenario.



1. If the consequence of each accident scenario is 100 injuries, what is the total risk of the accident?
2. Calculate the exact probability of 

Assume that A, B, and C are independent, but not mutually exclusive. P(A) = 0.4,

P(B) = 0.25, P(C) = 0.8