**Question 5**

**a)** Theoretical/Reasoning

**Shape

Description automatically generatedb)**

**Table

Description automatically generatedc)**

**Diagram, schematic

Description automatically generated with medium confidenced)**

Diagram, schematic

Description automatically generated with medium confidence

Text, schematic

Description automatically generated with medium confidence

Diagram

Description automatically generated

**Question 6**

**a)**

Diagram

Description automatically generated

**b)** Using Bayes' theorem, we know that:

P (Location|Observation) = P (Observation|Location)\*P (Location) \ P(Observation).

**c)**

1. P (C)=

P (C|P,S)\*P(P)\*P(S)+P(C|~P,S)\*P(~P)\*P(S)+P(C|P,~S)\*P(P)\*P(~S)+P(C|~P,~S)\*P(~P)\*P(~S) = 0.010

2. P(P|C) = P(C|P)\*P(P)\P(C)

3. P(X|C) = P(X|C)\*P(C)+P(X|~C)\*P(~C) = 0.20

4. P(D|C) = P(D|C)\*P(C)+P(D|~C)\*P(~C) = 0.296