Name of the Subject: KNOWLEDGE SYSTEM Subject Code: IT-714

Seat No: IT076 Student ID: 18ITUBN116 Branch/Sem: IT-VII

Q2 a

$A = 0.5/1 + 0.4/2 + 0.6/4 + 0.8/5$

$B = 0.7/2 + 0.6/5 + 0.2/6 + 0.1/7$

$A \times B$

$C = A \times B$

$= \{ \mu_C(x)/(a,b) \mid a \in A, b \in B, \mu_C(c) = \min[\mu_A(a), \mu_B(b)] \}$

$A \times B = \min[0.5, 0.7]/(1,2) + \min[0.5, 0.6]/(1,5) + \min[0.5, 0.2]/(1,6) + \min[0.5, 0.1]/(1,7) + \min[0.4, 0.7]/(2,2) + \min[0.4, 0.6]/(2,5) + \min[0.4, 0.2]/(2,6) + \min[0.4, 0.1]/(2,7) + \min[0.6, 0.7]/(4,2) + \min[0.6, 0.6]/(4,5) + \min[0.6, 0.2]/(4,6) + \min[0.6, 0.1]/(4,7) + \min[0.8, 0.7]/(5,2) + \min[0.8, 0.6]/(5,5) + \min[0.8, 0.2]/(5,6) + \min[0.8, 0.1]/(5,7)$

$= 0.5/(1,2) + 0.5/(1,5) + 0.2/(1,6) + 0.1/(1,7) + 0.4/(2,2) + 0.4/(2,5) + 0.2/(2,6) + 0.1/(2,7) + 0.6/(4,2) + 0.6/(4,5) + 0.2/(4,6) + 0.1/(4,7) + 0.7/(5,2) + 0.6/(5,5) + 0.2/(5,6) + 0.1/(5,7)$

$A * B = (0.5)(0)/(1) + (0.4)(0.7)/2 + (0)(0)/3 + (0.6)(0)/4 + (0.8)(0.6)/5 + (0)(0.2)/6 + (0)(0.1)/7$

$= 0.28/2 + 0.48/5$

$= 2 + 0.096$

$= 2.096$

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Name of the Subject: KS Subject Code: IT-714

Seat No: IT076 Student ID: 18ITUBN116 Branch/Sem: IT-VII

Q2 C

Terminology

- Smoke - S
- Lung Disease - L
- Shortness of Breath = SB
- Chest Pain - C
- Cough - CV
- Cold - CO
- Fever - F

- Find Probabilty of Chest Pain P(C)

$$P(C) = P(C, L, S) + P(C, \sim L, S) + P(C, \sim L, \sim S) + P(C, L, \sim S)$$

$$P(C, L, S) = P(S) * P(L|S) * P(C|L)$$
$$= 0.2 * (0.91009) * (0.208)$$
$$= 4.197 \times 10^{-3}$$

$$P(C, \sim L, S) = P(S) * P(\sim L|S) * P(C|\sim L)$$
$$= 0.2 * (0.8991) * (0.01)$$
$$= 1.798 \times 10^{-3}$$

$$P(C, \sim L, \sim S) = P(\sim S) * P(\sim L|\sim S) * P(C|\sim L)$$
$$= 0.8 * 0.999 * 0.01$$
$$= 7.992 \times 10^{-3}$$

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$P(C, L, \sim S) = P(\sim S) * P(L|\sim S) * P(C|\sim L)$

$= 0.8 \times 0.01 \times 0.208$.

$= 1.664 \times 10^{-3}$

$P(C) = 4.197 \times 10^{-3} + 1.798 \times 10^{-3} + 7.992 \times 10^{-3} + 1.664 \times 10^{-3}$

$= \boxed{0.015651}$

Name of the Subject: KS Subject Code: IT-714

Seat No: IT076 Student ID: 18ITUBN116 Branch/Sem: IT-VII

03 a

Prop: Ticket
Seat
Play.

Roles
- Person (watcher) - P
- Ticket distributor - TD
- Ticket check - TC

Entry Condition
- P wants to see a play.
- P has a money.

Result
- P saw a play
- P has less money
- P is happy

Scene 1: Going to theatre.
- P PTRANS P into theatre
- P ATTEND eyes to ticket counter.count

Scene 2: Buying Ticket.
- P PTRANS P to ticket counter
- P MTRANS to TD
- TD ATRANS ticket to P.

Sen 3: Goes inside hall

P PTRANS P into Hall
Tc ATTEND eys on Ticket POSS by P
Tc MTRANS to P
P PTRANS P to seat
P moves P to Sitting position.

Sen 4: Watching

P ATTEND eys to play
P MBUILD from play.

Sen 5 - exit

P PTRANS P out of Hall.

Q3 b

domain
list : Symbol*
predicate
last (list)

Clauses
last([X]):-
write ("In Last element is: ");
write (X).
last([Y|Tail]):-
last (Tail).