CS161 - Quiz 6

Started: Mar 10 at 6:06pm

Quiz Instructions

Question 1 — 1 pts

$Pr(\alpha) = Pr(\alpha \wedge \beta)\, Pr(\alpha \wedge \neg\beta)$ *for any events* α *and* β

- ○ True
- ◉ False

Question 2 — 1 pts

If X and Y are probabilistically independent, then they must continue to be independent given any variable Z.

- ◉ True
- ○ False

Question 3 — 1 pts

The local semantics of Bayesian network says:

- ○ Every node is independent of its parents given its non-descendants
- ○ Every node is independent of its descendants given its parents
- ○ None of the others
- ○ Every node is independent of its parents given its descendants

- (●) Every node is independent of its non-descendants given its parents

Question 4

1 pts

Consider a Bayesian network $X_1 \longrightarrow X_2 \longrightarrow \ldots \longrightarrow X_n$ (a chain with n nodes). Assume that each variable X_i has only two values x_i and $\overline{x_i}$. Then $Pr\left(x_3 \mid \overline{x_1}\right)$ is equal to:

- (●) $Pr\left(x_3 \mid x_2\right) Pr\left(x_2 \mid \overline{x_1}\right) + Pr\left(x_3 \mid \overline{x_2}\right) Pr\left(\overline{x_2} \mid \overline{x_1}\right)$
- ( ) $Pr\left(x_3, \overline{x_1}\right) Pr\left(\overline{x_1}\right)$
- ( ) None of the others
- ( ) $Pr\left(x_3\right)$
- ( ) $Pr\left(x_3 \mid x_2, \overline{x_1}\right) + Pr\left(x_3 \mid \overline{x_2}, \overline{x_1}\right)$

Quiz saved at 6:08pm Submit Quiz