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10-SE-02

Q#1. Identify the rule of inference in the following

"Identify the rule of inferen,

If you have a current password, then you can log on to the network.

you have a current passeword

Therefor you can log on the network.

$$\frac{\begin{array}{l} p \rightarrow q \\ p \end{array}}{\therefore q} \quad = \text{Modus ponens.}$$

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Q#2. using resolution, Prove the following

$$\frac{\begin{array}{l} p \rightarrow q \\ p \vee q \end{array}}{\therefore q.}$$

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$p \rightarrow q = \bar{p} \vee q$ & now we have

$\bar{p} \vee q$

$p \vee q$

Q#3. validity.

$p \to (q \to r)$

$q \to (p \to r)$

$\therefore (p \vee q) \to r$

p	q	p→q
T	T	T
T	F	F
F	T	T
F	F	T

~~p q r q→r p→r p→(q→r) q→(p→r)~~

p∨q = T, T T T T F T F

p	q	r	q→r	p→r	p→(q→r)	q→(p→r)	(p∨q)→r
T	T	T	T	T	T	T	T
T	T	F	F	F	F	F	F
T	F	T	T	T	T	T	T
T	F	F	T	F	T	T	F
F	T	T	T	T	T	T	T
F	T	F	F	T	T	T	F
F	F	T	T	T	T	T	T
F	F	F	T	T	T	T	T

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Ans = This Invalid argument.

Q#4. if $x+y \geq 2$ then.

$x \geq 1$ or $y \geq 1$. suppose that.

$x+y \not\geq 2$. then.

$x \geq 1$ —①

$y \geq 1$ —②. adding ① & ②

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