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**Pir Maher Ali Shah Arid Agriculture University Rawalpindi**

**University Institute of Information Technology**

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**BSSE\_5\_A\_Evening**

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You are about to leave for school in the morning

and discover you don’t have your glasses. You know

the following statements are true:

a) If my glasses are on the kitchen table, then I saw

them at breakfast.

b) I was reading the newspaper in the living room

or I was reading the newspaper in the kitchen.

c) If I was reading the newspaper in the living

room, then my glasses are on the coffee table.

d) I did not see my glasses at breakfast.

e) If I was reading my book in bed, then my

glasses are on the bed table.

f) If I was reading the newspaper in the kitchen,

then my glasses are on the kitchen table.

Where are the glasses?

Using

p My glasses are on the kitchen table.

q I saw my glasses at breakfast.

r I was reading the newspaper in the living room.

s I was reading the newspaper in the kitchen.

t My glasses are on the coffee table.

u I was reading my book in bed.

v My glasses are on the bed table.

we translate the statements as:

a) p → q

b) r ∨ s

c) r → t

d) ¬q

e) u → v

f) s → p

and argue as follows:

p → q

¬q

∴ ¬p

s → p

¬p

∴ ¬s

r ∨ s

¬s

∴ r

r → t

r

∴ t

The glasses are on the coffee table!