Section 1.12: cont'd

Consider the following conditional statements. Do they still make sense when written as a bicondional?

① If today is February 14th, then today is Valentine's Day.

Yes

because if today ≠ Feb 14th, today ≠ valentine's day

② If you eat at Joe's, you will have a good meal.

No

because there are potentially other places that you could have a good meal.

example: True: <mark>If and only if</mark> Snarks are Boojums, then the bellman is incorrect.

a) Snarks are Boojums. Is the bellman correct?   No
b) Snarks are not Boojums. Is the bellman correct? Yes
c) The bellman is correct. Are Snarks Boojums? No
d) The bellman is incorrect. Are Snarks Boojums? Yes

example: Is the bicondional, $p \leftrightarrow q$, logically equivalent to $(p \wedge q) \vee (\bar{p} \wedge \bar{q})$? Justify your answer using a truth table.

p	q	$p \leftrightarrow q$	$p \wedge q$	$\bar{p}$	$\bar{q}$	$\bar{p} \wedge \bar{q}$	$(p \wedge q) \vee (\bar{p} \wedge \bar{q})$
0	0	1	0	1	1	1	1
0	1	0	0	1	0	0	0
1	0	0	0	0	1	0	0
1	1	1	1	0	0	0	1

YES