

14-a:

Yes

14-b:

Yes

14-c:

Yes

14-d:

No

15-a:

Let X_1 and X_2 be two Boolean variables, and y is the output

AND: $y = \text{sgn} (X_1 + X_2 - 1.5)$

OR: $y = \text{sgn} (X_1 + X_2 - 0.5)$

15-b:

If a linear function is used as the activation function of a multilayer neural network, then the output will also be a linear function, which will degenerate into a perceptron.