Question 2)

Solution 1 For function $f(A,B)$

the input A and B are linearly separable.
Thus representing the function in
a single unit. i.e single logistic threshold
unit.

Output = step(Z), where $z = \Sigma w_i x_i$

where step $(z) = \begin{cases} 1 & \text{if } z \geq 0 \\ 0 & \text{if } z < 0 \end{cases}$

A and B are the inputs which are 0 or 1.
as per the given table
when A = 1, B = 0 the output = 1

Thus taking weight as 1 and -1 such
that the given input and output fits
in the step funtion and works out
with the threshold of (-0.7)

$$z = A(1) + B(-1) - 0.7$$

So the function

$$f(A,B) = \begin{cases} 1 & \text{if } A \cdot B - 0.7 \geq 0 \\ 0 & \text{if } A - B - 0.7 < 0 \end{cases}$$

A

0.7

1

$f(A,B)$

-1

B