Ist Quiz on Artificial Intelligence

1. Determine the clausal form for following predicate expression? (4 pt)

$$\exists x \forall y (\forall z (p(y,z) \lor \neg x \lor y) \Rightarrow (\forall z q(y,z) \land \neg r(x,y)))$$

2. Consider the 3-puzzle problem for which start state and goal state are shown in figure 1. There are 4 operators, which move the **blankbox** - up, down, right, left. Show the trace-path using DFS for reaching to goal state. (3 pt)
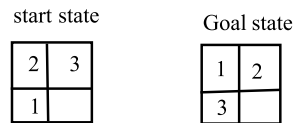

Figure 1: Start and Goal states.

3. Write the state-transitions for given 4-litre and 3-litre jugs, as how to fill-up exactly 2-litre water in the 4-litre jug? You may exchange the water, pour the water on ground, but not allowed to use any other pot. (3 pt)