# Logic Puzzles Assessment Guide

This guide contains three logic puzzles arranged in order of difficulty, along with their solutions and evaluation criteria for candidate assessment.

## 1. The Water Jug Problem (Easy)

\*\*Problem Statement:\*\*

You have a 5-liter jug and a 3-liter jug. Neither has markings on them. You need to measure exactly 4 liters of water. How can you do it?

\*\*Solution:\*\*

1. Fill the 5L jug completely (5L)

2. Pour from 5L jug into 3L jug until full (5L → 3L = 2L left in 5L jug)

3. Empty the 3L jug

4. Pour the remaining 2L from 5L jug into 3L jug

5. Fill the 5L jug again

6. Carefully pour into 3L jug (which has 2L) until full

7. The amount left in the 5L jug is exactly 4L

\*\*What This Tests:\*\*

- Sequential problem-solving ability

- Basic mathematical reasoning

- Working memory (ability to track multiple variables)

- Methodical approach to problem-solving

- Comfort with numerical manipulation

- Ability to visualize multi-step processes

## 2. The River Crossing Puzzle (Easy-Medium)

\*\*Problem Statement:\*\*

A farmer needs to transport a fox, a chicken, and a bag of grain across a river. The boat can only carry the farmer and one item at a time. If left alone, the fox will eat the chicken, and the chicken will eat the grain. How can the farmer get everything across safely?

\*\*Solution:\*\*

1. Farmer takes chicken across first (fox and grain safe together)

2. Farmer returns alone

3. Farmer takes fox across

4. Farmer brings chicken back

5. Farmer takes grain across (fox and grain safe together)

6. Farmer returns alone

7. Farmer takes chicken across last

\*\*What This Tests:\*\*

- Logical reasoning

- State management

- Constraint handling

- Ability to identify conflicts

- Forward planning

- Visualization of complex scenarios

- Understanding of dependency relationships

## 3. The Light Bulb Problem (Medium)

\*\*Problem Statement:\*\*

You are outside a room with three light switches. Inside the room are three light bulbs. You can flip the switches as much as you want while outside, but once you enter the room, you cannot flip any more switches. How can you determine which switch controls which bulb by entering the room only once?

\*\*Solution:\*\*

1. Turn on first switch and leave it on for several minutes

2. Turn off first switch and turn on second switch

3. Enter the room immediately

4. The bulb that's on is controlled by second switch

5. The bulb that's warm but off is controlled by first switch

6. The bulb that's off and cool is controlled by third switch

\*\*What This Tests:\*\*

- Lateral thinking

- Creative problem-solving

- Ability to consider non-obvious properties (heat)

- Breaking free from assumed constraints

- Attention to detail

- Understanding of cause and effect

## Evaluation Guidelines

When administering these puzzles, consider the following:

1. \*\*Time Management:\*\*

- Allow 10-15 minutes per puzzle

- Note how candidates manage their time

- Observe if they rush or take a methodical approach

2. \*\*Problem-Solving Process:\*\*

- Ask candidates to think aloud

- Note whether they ask clarifying questions

- Observe their systematic approach (or lack thereof)

- Watch for organization of thoughts and ideas

3. \*\*Response to Hints:\*\*

- Start with minimal hints

- Note how candidates use provided hints

- Observe if they can build on partial solutions

4. \*\*Communication:\*\*

- Evaluate clarity in explaining their approach

- Note ability to articulate their thinking process

- Observe how they handle getting stuck

5. \*\*Learning and Adaptation:\*\*

- After solving (or attempting), discuss alternative approaches

- Note their receptiveness to different solutions

- Observe their ability to learn from the experience

Remember: The goal is not just to see if candidates can solve the puzzles, but to understand their problem-solving approach, logical thinking process, and ability to handle challenges systematically.