Test Document

Path finding:

1. Go to given coordinates while taking the shortest path, starting from the 4 corners. (without obstacles)
2. Go to given coordinates with one obstacle in the way, starting from the 4 corners.
3. Go to given coordinates with a set of three obstacles in the way, starting from the 4 corners.
4. Test the optimal speed for turning and going forward (criteria: stability and precision of the odometer)

Detecting beam:

1. Up to what distance can the sensors detect the light?
2. Can it localize the light source if the flag is on the floor?
3. Can we localize the light source if the flag is on an obstacle?

Robot arm:

1. Can the robot grab the light source from the ground?
2. Can the robot grab the light source from an obstacle?
3. Is the robot stable with its extended arm? (without the light source)
4. Is the robot stable with its extended arm? (with the light source)
5. Can it lift the light source properly from the ground?
6. Can it lift the light source properly from an obstacle?

Odometer:

1. Do the lab 2 in order to test that our odometer works correctly.

Localization:

1. Do the lab 4 in order to check for the robot's position and heading.

Integration testing:

1. Starting from every corner, find its position and heading, find the beacon, go towards it and pick it up from the ground. (without obstacle)
2. Starting from every corner, find its position and heading, find the beacon, go towards it and pick it up from the ground. (with one obstacle hiding it)
3. Starting from every corner, find its position and heading, find the beacon, go towards it and pick it up from an obstacle.
4. Starting from every corner, find its position and heading, find the beacon, go towards it, pick it up, and bring it on top of an obstacle. (defensive side)
5. Starting from every corner, find its position and heading, find the beacon, go towards it and pick it up from the ground and bring it to known coordinates. (without obstacle)
6. Starting from every corner, find its position and heading, find the beacon, go towards it and pick it up from the ground and bring it to known coordinates. (with one obstacle hiding it)
7. Starting from every corner, find its position and heading, find the beacon, go towards it, pick it up from an obstacle and bring it to known coordinates.