

Lesson: Sensing

I. Direction: Identify the sensor being described in each item. Select the correct name from the dropdown menu below.

1. It is a sensor used to measure the rotational angle of the robot's body.
2. It is a sensor that uses/ emits ultrasonic sound waves to determine distance between the sensor and an obstacle.
3. It uses reflected light to detect an object's color, hue value, grayscale value, and proximity.
4. It is a sensor that returns value of 1 when pressed and 0 when released.
5. It can detect capacitive touch, such as the touch of a finger. It can also be set to display many colors.

II. Direction: Choose the best answer for each question.

6. When will the robot stop in this program?

```
19 # main thread
20 dt.drive(50)
21 sys.wait_for(bumper_back.is_pressed)
22 dt.off()
```

- When the robot detects color Red.
- When the robot moves forward for 50cm.
- When the robot's bumper switch is pressed.
- When the robot detects an object in front of it.

7. Using Gyro Sensor, the robot should turn 45 degrees to its left. What is wrong in this program?

```
20 # main thread
21 # Turn for Angle to the Left
22 Drive_Lt.run(-(20))
23 Drive_Rt.run(20)
24 sys.wait_for(lambda: gyro_4.angle() <= 45)
25 Drive_Lt.off()
26 Drive_Rt.off()
```

- Nothing is wrong in the program.
- The value of degrees should be negative.
- The right motor should be set in negative power level.
- The Boolean Comparison Operator should be \geq , not \leq .

8. When using an **if/else** statement, the program will run what is under the **if** statement if _____.

If the condition of the if statement is false.

If the condition of the if statement is true.

If the condition of the if statement is either true or false.

If the condition of the if statement is neither true nor false.

9. To build a simple line tracking algorithm, you just use an if/else statement. You do not need a repeat loop.

True

False

Sometimes

None of the choices

10. What happened to the value of the distance sensor as the robot gets closer to an object?

Decrease

Increase

Reset

Stay the same