Rory Lange midterm

ARDUINO MIDTERM
1) Multiple Choice.
   1) D 2) C 3) B 4) C 5) B
   6) B 7) D 8) A 9) B 10) C

2) Logic Gates
a)

A	B	C	D	E	a
0	0	0	0	0	0
0	0	1	0	0	0
0	1	0	1	0	0
0	1	1	1	1	0
1	0	0	1	0	0
1	0	1	1	1	0
1	1	0	1	1	0
1	1	1	1	1	0

b)

band → ; and a
→ ined d

A	B	C	D	E	F	G	e
0	0	0	0	0	0	0	0
0	0	0	0	1	0	0	0
0	0	0	1	0	0	0	0
0	0	1	0	1	0	0	0
0	0	1	1	0	0	0	0
0	1	0	0	1	0	0	0
0	1	1	0	0	0	0	0
0	1	1	0	1	0	0	0
1	0	0	0	0	0	0	0
1	0	0	1	0	0	0	0
1	0	1	0	1	0	0	0
1	1	0	1	0	0	0	0
1	1	1	0	1	0	0	0
1	1	1	0	0	0	0	0

46

3)
a) void setup()
   {
   pin Mode(13, OUTPUT);
   }

   void Loop()
   {
   digital Write(13, HIGH);
   delay (1000);
   digital Write(13, Low);
   delay (1000);
   }

b) Screenshot Included Below.

7) a) 27820. Ohms
   60.0000 Ohms

   b) 27 000. Ohms
   9 = I (27000)
   I = 9/27000 Amps

   $V = IR$

   c) 37 Ohms
   V = IR
   48 = I · 37
   I = 48/37 Amps

Question 3B

```
 1  void setup()
 2  {
 3      for (int i = 8; i <= 13; i++) {
 4          pinMode(i, OUTPUT);
 5      }
 6  }
 7
 8  void loop()
 9  {
10      for (int i = 8; i<=13; i++) {
11          if (i % 2 == 0) {
12              digitalWrite(i ,HIGH);
13              digitalWrite(i+1, HIGH);
14              delay(1000);
15              digitalWrite(i, LOW);
16              digitalWrite(i+1, LOW);
17              delay(1000);
18          }
19      }
20      delay(10);
21  }
```

Question 4

```
1  int led = 2;
2
3  void setup()
4  {
5    pinMode(led, OUTPUT);
6  }
7
8  void loop()
9  {
10   //write 5050
11   //...... -----
12   for (int i = 0; i < 2; i ++) {
13     //......
14     for (int i = 0; i < 5; i++) {
15       digitalWrite(led, HIGH);
16       delay(150);
17       digitalWrite(led, LOW);
18       delay(100);
19     }
20     //-----
21     for (int i = 0; i < 5; i++){
22       digitalWrite(led, HIGH);
23       delay(400);
24       digitalWrite(led, LOW);
25       delay(100);
26     }
27   }
28   delay(5000);
29 }
```

Question 5

```
 1  void setup()
 2  {
 3     Serial.begin(9600);
 4     Serial.println("Name: Rory Lange");
 5     Serial.println("BE 1200 Section 002");
 6     Serial.println("Bachelor's of Science Computer Science");
 7  }
 8
 9  void loop()
10  {}
```

Serial Monitor

```
Name: Rory Lange
BE 1200 Section 002
Bachelor's of Science Computer Science
```

Question 6

```
1   int Array[] = {2, 3, 4, 5, 6, 7, 8, 9};
2
3   void setup(){
4     for (int count=0; count<=8; count++) {
5       pinMode(Array[count], OUTPUT);
6     }
7   }
8
9   void loop() {
10    for (int count=0; count>8;  count++) {
11      digitalWrite(Array[count], HIGH);
12      delay(1000);
13      digitalWrite(Array[count], LOW);
14      delay(1000);
15    }
16    for (int count=9; count<=10; count--) {
17      digitalWrite(Array[count], HIGH);
18      delay(1000);
19      digitalWrite(Array[count], LOW);
20      delay(1000);
21    }
22  }
```

Question 7 on piece of paper