Started on	Sunday, 24 July 2022, 12:48 PM
State	Finished
Completed on	Sunday, 24 July 2022, 12:55 PM
Time taken	6 mins 39 secs
Grade	**32.00** out of 32.00 (**100**%)

Question **1**

Correct

Mark 1.00 out of 1.00

How many bytes does a char data type represent?

Select one:

- a. 1 ✔
- b. 2
- c. 8
- d. 4

Question **2**

Correct

Mark 1.00 out of 1.00

What is a common term for a resistor used in series with a led?

Select one:

- a. Voltage limit resistor
- b. Don't need a resistor, so I don't know
- c. Current limiting resistor ✔

Question **3**

Correct

Mark 1.00 out of 1.00

What is the purpose of a current limiting resistor?

Select one:

- a. Limit current ✔
- b. do nothing
- c. Act as a capacitor
- d. act as a led

Question **4**

Correct

Mark 1.00 out of 1.00

How many times will the loop run?

```
1  #include <stdio.h>
2
3  int main()
4  {
5      int r;
6
7      for ( r = 0; r < 15; r++ ) {
8          printf( "%d\n", r );
9      }
10 }
```

Select one:

- a. None of the Above
- b. 0
- c. 10
- d. 15 ✔

Question **5**

Correct

Mark 1.00 out of 1.00

What will be the last character printed by the print statement?

```c
#include <stdio.h>

int main()
{
    int x;

    for ( x = 0; x < 10; x++ ) {
        printf( "%d\n", x );
    }
}
```

Select one:

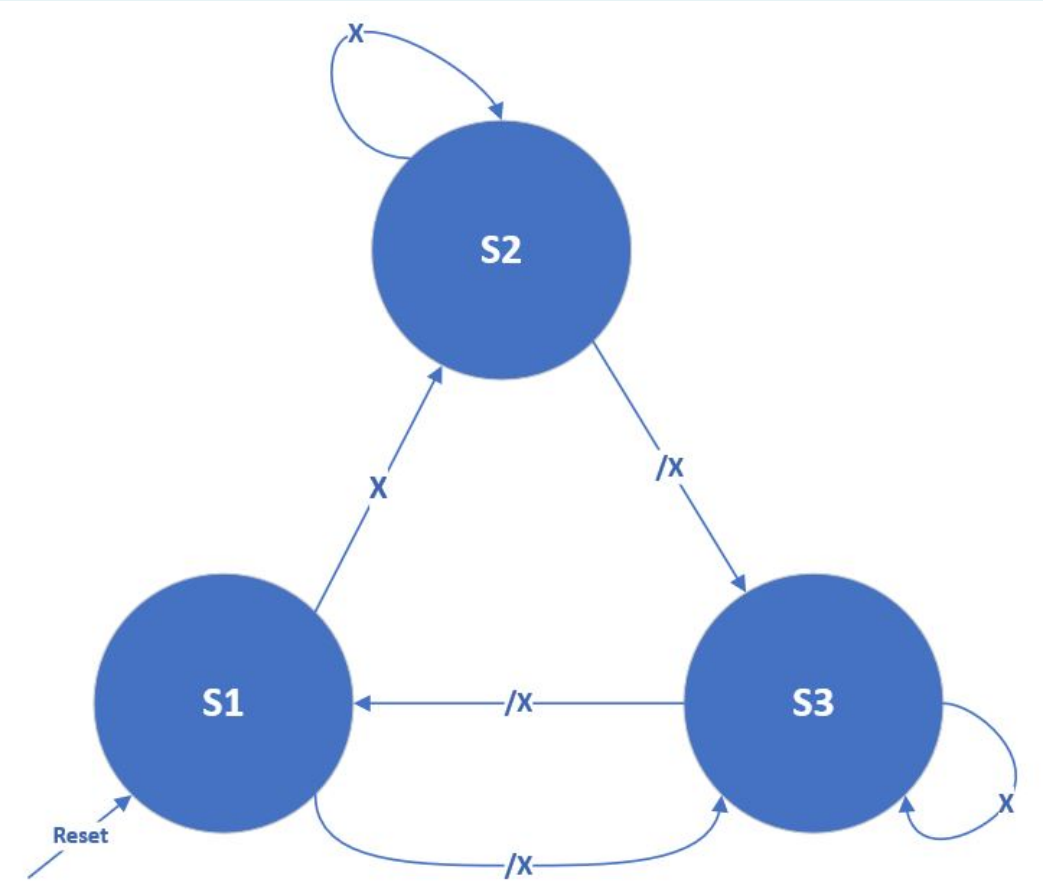
- a. Nothing
- b. 0
- c. 10
- d. 9 ✔

Question **6**

Correct

Mark 1.00 out of 1.00

How many unused state are there for the state machine below?



Select one:

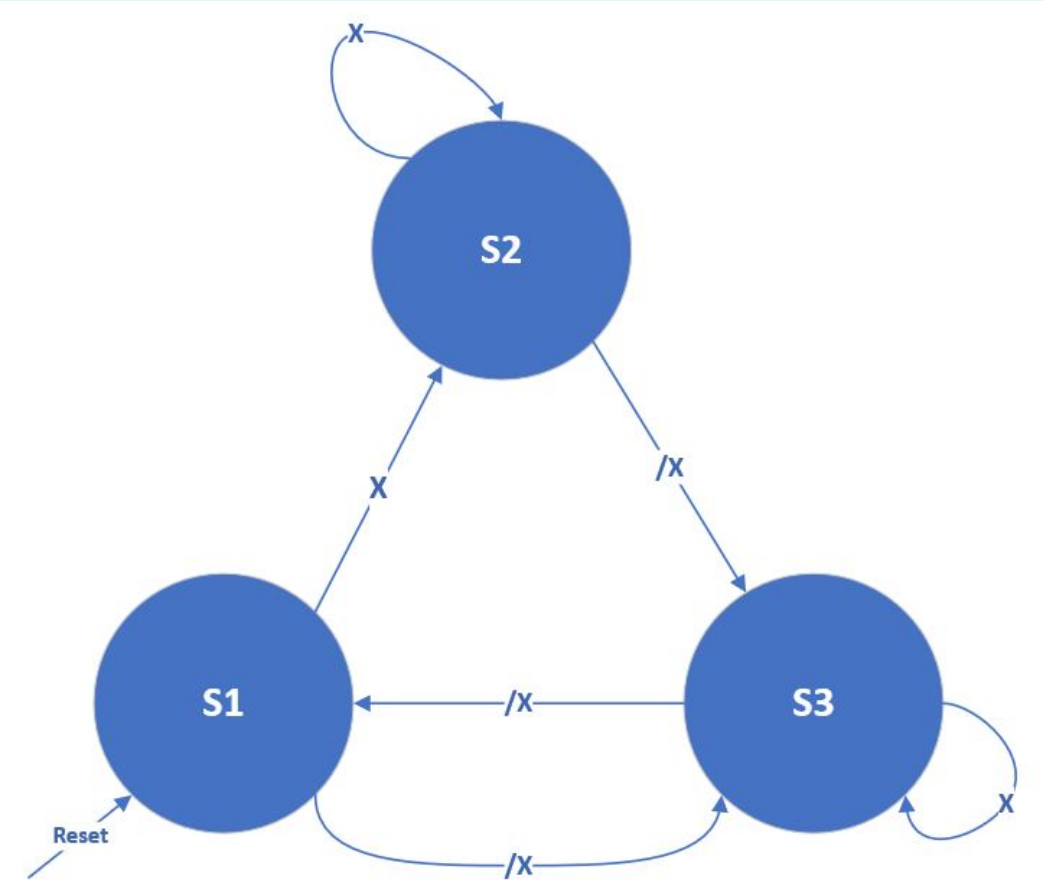
- a. 4
- b. 1 ✔
- c. None Mentioned
- d. 2
- e. 3

Question **7**

Correct

Mark 1.00 out of 1.00

If reset = 1, X=1. What will the current state after two clock cycles? *See the FSM below.*



Select one:

- a. S3
- b. None Mentioned
- c. Unknown
- d. S2
- e. S1 ✔

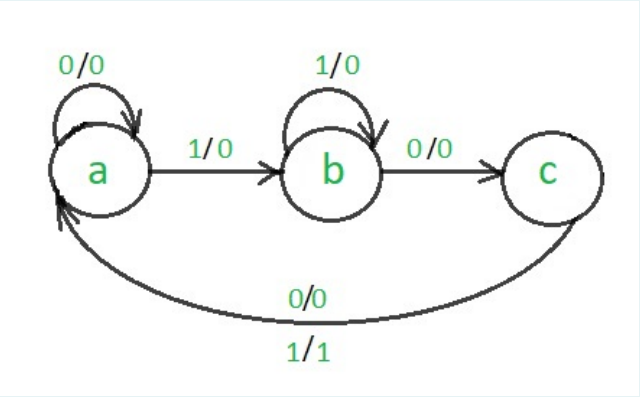
Question **8**

Correct

Mark 1.00 out of 1.00

Below is a finite state machine diagram of a sequence detector. What sequence does it detect?

Note: The format of the transitions is (Input) / (Mealy Output)



Select one:

- a. 10
- b. 010
- c. 101 ✔
- d. 100
- e. 11

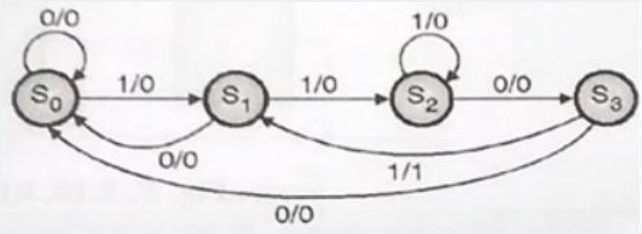
Question **9**

Correct

Mark 1.00 out of 1.00

Below is a finite state machine diagram of a sequence detector. What sequence does it detect?

Note: The format of the transitions is (Input) / (Mealy Output)



Select one:

- a. 1100
- b. 1101 ✔
- c. 100
- d. 110
- e. 1001

Question **10**

Correct

Mark 1.00 out of 1.00

What is the value of the variable 'x' after line 8?

```
1  int x = 5;
2  int r = 0;
3
4  if(x < 10) {
5      r = 15;
6  } else {
7      r = 10;
8  }
```

Select one:

- a. x = 0
- b. x = 15
- c. x = 5 ✔
- d. x = 10

Question **11**

Correct

Mark 1.00 out of 1.00

What is the value of the variable 'r' after line 6?

```
1  int x = 15;
2  int r = 0;
3
4  if(x < 10) {
5      r = 15;
6  }
```

Select one:

- a. r = 10
- b. r = 0 ✔
- c. r = 15
- d. r = 5

Question **12**

Correct

Mark 1.00 out of 1.00

What is the value of the variable 'r' after line 10?

```
1  int x = 15;
2  int r = 0;
3
4  if(x < 5) {
5      r = 15;
6  } else if(x > 5) {
7      r = 10;
8  } else {
9      r = 1;
10 }
```

Select one:

- a. r=0
- b. r=10 ✔
- c. r=5
- d. r=15

Question **13**

Correct

Mark 1.00 out of 1.00

What is the value of the variable 'r' after line 10?

```
1  int x = 5;
2  int r = 0;
3
4  if(x < 5) {
5      r = 15;
6  } else if(x > 5) {
7      r = 10;
8  } else {
9      r = 1;
10 }
```

Select one:

- a. r=1 ✔
- b. r=0
- c. r=10
- d. r=15

Question **14**

Correct

Mark 1.00 out of 1.00

How many bytes are needed to represent a integer?

Select one:

- a. 1
- b. 8
- c. 4 ✔
- d. 16

Question **15**

Correct

Mark 1.00 out of 1.00

What is the output of the following program?

```c
#include <stdio.h>

int main()
{
    int *ptr;
    int x;

    ptr = &x;
    *ptr = 5;

    printf(" x = %d\n", x);
    printf(" *ptr = %d\n", *ptr);

    *ptr += 5;
    printf(" x  = %d\n", x);
    printf(" *ptr = %d\n", *ptr);

    return 0;
}
```

Select one:

a. x = 0
*ptr = 0
x = 5
*ptr = 5

b. Compile error

c. x = 5
*ptr = 5
x = 10
*ptr = 10

d. x = 5
*ptr = 5
x = 5
*ptr = 5

Question **16**

Correct

Mark 1.00 out of 1.00

What is the output of the following program?

```c
#include <stdio.h>

int main () {

   int  var = 20;   /* actual variable declaration */
   int  *ip;        /* pointer variable declaration */

   ip = &var;  /* store address of var in pointer variable*/

   printf("var variable: %x\n", &var  );

   return 0;
}
```

Select one:

- a. An address that stores the var variable ✔
- b. 20
- c. None of the above
- d. Compile error

Question **17**

Correct

Mark 1.00 out of 1.00

What will a pull up resistor do when a switch is open?

Select one:

- a. Do nothing
- b. Pulls the voltage up to a stable logic level ✔
- c. Pulls the voltage down to a stable logic level
- d. I don't know

Question **18**

Correct

Mark 1.00 out of 1.00

A 4-byte large integer can represent values between what range?

Select one:

- a. 0 to 65,535
- b. 0 to 4,294,967,295
- c. -2,147,483,648 to 2,147,483,647 ✔
- d. -32,768 to 32,767

Question **19**

Correct

Mark 1.00 out of 1.00

A 2-byte large integer can represent values between what range?

Select one:

- a. -2,147,483,648 to 2,147,483,647
- b. 0 to 4,294,967,295
- c. 0 to 65,535
- d. -32,768 to 32,767 ✔

Question **20**

Correct

Mark 1.00 out of 1.00

A 4-byte large unsigned integer can represent values between what range?

Select one:

- a. -2,147,483,648 to 2,147,483,647
- b. 0 to 4,294,967,295 ✔
- c. -32,768 to 32,767
- d. 0 to 65,535

Question **21**

Correct

Mark 1.00 out of 1.00

A 2-byte large unsigned integer can represent values between what range?

Select one:

- a. -2,147,483,648 to 2,147,483,647
- b. 0 to 65,535 ✔
- c. 0 to 4,294,967,295
- d. -32,768 to 32,767

Question **22**

Correct

Mark 1.00 out of 1.00

A example of a valid char data type would be 'B'

Select one:

- (•) True ✔
- ( ) False

Question **23**

Correct

Mark 1.00 out of 1.00

A current limiting resistor is optional when used in series with a LED.

Select one:

- ( ) True
- (•) False ✔

Question **24**

Correct

Mark 1.00 out of 1.00

A do while loop will run at least once irregardless of the condition.

Select one:

- (•) True ✔
- ( ) False

Question **25**

Correct

Mark 1.00 out of 1.00

A valid type of integer is 2.0

Select one:

- ( ) True
- (•) False ✔

Question **26**

Correct

Mark 1.00 out of 1.00

A mealy output on a finite state machine is determined by the current state and input.

Select one:

- (•) True ✔
- ( ) False

Question **27**

Correct

Mark 1.00 out of 1.00

A moore output on a finite state machine is determined by the current state.

Select one:

- (•) True ✔
- ( ) False

Question **28**

Correct

Mark 1.00 out of 1.00

Pointers store the memory location of where data is stored.

Select one:

- (•) True ✔
- ( ) False

Question **29**

Correct

Mark 1.00 out of 1.00

If a pointer is incremented, then they are incremented based on the size of the data type.

Select one:

- (•) True ✔
- ( ) False

Question **30**

Correct

Mark 1.00 out of 1.00

The & in front of a variable that is not a pointer will give the address of the variable.

Select one:

- (•) True ✔
- ( ) False

Question **31**

Correct

Mark 1.00 out of 1.00

A pull up/ down resistor helps provide a more stable input for device and should be used whenever possible in digital logic.

Select one:

- (•) True ✔
- ( ) False

Question **32**

Correct

Mark 1.00 out of 1.00

A while loop will run once irregardless of the condition.

Select one:

- ( ) True
- (•) False ✔

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