Unit 5 - Week 3

Assignment 3

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-02-19, 23:59 IST.

1) A sequential circuit differs from a combinational circuit in which of the following ways? *0 points*

- [ ] A sequential circuit's output depends not only on the current input, but also on the past input(s).
- [ ] A sequential circuit has one of its output fed back as input into the circuit.
- [ ] A sequential circuit is able to remember values.
- [ ] All of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
A sequential circuit's output depends not only on the current input, but also on the past input(s).
A sequential circuit has one of its output fed back as input into the circuit.
A sequential circuit is able to remember values.
All of the above

2) The transmission gates two transistors instead of one because *1 point*

- [ ] The output 1 should always be driven by the n-transistor.
- [ ] The output 0 should always be driven by the n-transistor.
- [ ] The output 1 should always be driven by the p-transistor.
- [ ] The output 0 should always be driven by the p-transistor.

No, the answer is incorrect.
Score: 0

Accepted Answers:
The output 0 should always be driven by the n-transistor.
The output 1 should always be driven by the p-transistor.

3) Which of the following is correct about latches and flip-flops? *1 point*

- ( ) Both latch and flip-flop are level triggered.
- ( ) Latch is edge-triggered whereas flip flop is level triggered.
- ( ) Latch is level triggered whereas flip flop is edge triggered.
- ( ) Both latch and flip-flop are edge triggered.

No, the answer is incorrect.
Score: 0

Accepted Answers:
Latch is level triggered whereas flip flop is edge triggered.

4) In a hypothetical case, if RAM4K contains 16 RAM256, how many address bits are needed to identify which RAM256 the given address belongs to?

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Numeric) 4

1 point

5) To *load* a new address into PC, setting which of the following value(s) is(are) *mandatory*? *1 point*

- [ ] reset=1
- [ ] load=1
- [ ] load=0
- [ ] reset=0

No, the answer is incorrect.
Score: 0

Accepted Answers:
load=1
reset=0

6) In which of the following options, the instructions in HACK ISA along with their properties are matched correctly? *1 point*

- [ ] A instruction - starts with 111.
- [ ] C instruction - used to perform ALU operation
- [ ] A instruction - loads data from memory.
- [ ] C instruction - starts with 0.

No, the answer is incorrect.
Score: 0

Accepted Answers:
C instruction - used to perform ALU operation
A instruction - loads data from memory.

7) The maximum value which can be loaded using an A-instruction is *1 point*

- ( ) $2^{16} - 1$
- ( ) $2^{15} - 1$
- ( ) $2^{14} - 1$
- ( ) 2^{15}

No, the answer is incorrect.
Score: 0

Accepted Answers:
$2^{15} - 1$

8) The destination bits $d1, d2, d3$ respectively, are used to write into, respectively, *1 point*

- ( ) A register, memory, D register
- ( ) M register, D register, A register
- ( ) A register, D register, M register
- ( ) A register, D register, memory

No, the answer is incorrect.
Score: 0

Accepted Answers:
A register, D register, memory

9) An assembler converts *1 point*

- ( ) HACK mnemonics to binary
- ( ) C program to Java
- ( ) C program to HACK Mnemonics
- ( ) C program to binary

No, the answer is incorrect.
Score: 0

Accepted Answers:
HACK mnemonics to binary

10) Which of the following is CORRECT about memory mapped IO? *1 point*

- [ ] Drawing pixels to screen can be achieved by writing to memory associated with SCREEN.
- [ ] Reading from keyboard can be achieved by writing to memory associated with KBD.
- [ ] Reading from keyboard can be achieved by reading from memory associated with KBD.
- [ ] Reading pixel from screen can be achieved by reading from memory associated with SCREEN

No, the answer is incorrect.
Score: 0

Accepted Answers:
Drawing pixels to screen can be achieved by writing to memory associated with SCREEN.
Reading from keyboard can be achieved by reading from memory associated with KBD.
Reading pixel from screen can be achieved by reading from memory associated with SCREEN