



ST. LAWRENCE HIGH SCHOOL

A Jesuit Christian Minority Institution



WORKSHEET – 41

Topic: subtractor and multiplexer circuits

Subject: COMPUTER SCIENCE

Class - 11

F.M:15

Chapter: Combinational logic Circuit

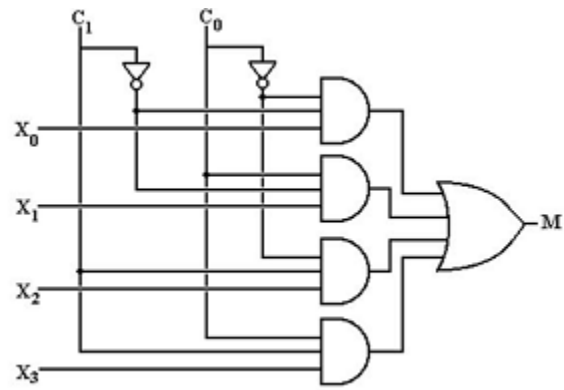
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Choose the correct answer for each question:

[5 X 1 = 15]

1. Half subtractor is used to perform subtraction of _____
 - a) 2 bits
 - b) 3 bits
 - c) 4 bits
 - d) 5 bits
2. For subtracting 1 from 0, we use to take a _____ from neighbouring bits.
 - a) Carry
 - b) Borrow
 - c) Input
 - d) Output
3. How many outputs are required for the implementation of a subtractor?
 - a) 1
 - b) 2
 - c) 3
 - d) 4
4. Let the input of a subtractor is A and B then what the output will be if $A = B$?
 - a) 0
 - b) 1
 - c) A
 - d) B
5. Let A and B is the input of a subtractor then the output will be _____
 - a) $A \oplus B$
 - b) $A \text{ AND } B$
 - c) $A \text{ OR } B$
 - d) $A \text{ EXNOR } B$
6. Let A and B is the input of a subtractor then the borrow will be _____
 - a) $A \text{ AND } B'$
 - b) $A' \text{ AND } B$
 - c) $A \text{ OR } B$
 - d) $A \text{ AND } B$
7. The output of a full subtractor is same as _____
 - a) Half adder
 - b) Full adder

- c) Half subtractor
 - d) Decoder
8. Full subtractor is used to perform subtraction of _____
- a) 2 bits
 - b) 3 bits
 - c) 4 bits
 - d) 8 bits
9. What is a multiplexer?
- a) It is a type of decoder which decodes several inputs and gives one output
 - b) A multiplexer is a device which converts many signals into one
 - c) It takes one input and results into many output
 - d) It is a type of encoder which decodes several inputs and gives one output
10. It is possible for an enable or strobe input to undergo an expansion of two or more MUX ICs to the digital multiplexer with the proficiency of large number of _____
- a) Inputs
 - b) Outputs
 - c) Selection lines
 - d) Enable lines
11. If the number of n selected input lines is equal to 2^m then it requires _____ select lines.
- a) 2
 - b) m
 - c) n
 - d) 2^n
12. How many NOT gates are required for the construction of a 4-to-1 multiplexer?
- a) 3
 - b) 4
 - c) 2
 - d) 5
13. The enable input is also known as _____
- a) Select input
 - b) Decoded input
 - c) Strobe
 - d) Sink
14. In the given 4-to-1 multiplexer, if $c_1 = 0$ and $c_0 = 1$ then the output M is _____



- a) X0
- b) X1
- c) X2
- d) X3

15. How many select lines would be required for an 8-line-to-1-line multiplexer?

- a) 2
- b) 4
- c) 8
- d) 3

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