



CS302

Note:

VuGujranwala.com is not responsible for any solved solution, but honestly we are trying our best to Guide correctly.

Exam Term : Mid
Total MCQS : 102

Prepared By :



1 - 2's complement of any binary number can be calculated by

1. adding 1's complement twice
2. adding 1 to 1's complement
3. subtracting 1 from 1's complement.
4. calculating 1's complement and inverting Most significant bit

Correct Choice : 2

From Lectuer # 2

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2 - Sum-of-Weights method is used _____

1. to convert from one number system to other
2. to encode data
3. to decode data
4. to convert from serial to parralel data

Correct Choice : 1

From Lectuer # 2

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3 - The complement of a variable is always

1. 1
2. 0
3. The inverse of the variables correct answer
4. None

Correct Choice : 3

From Lectuer # 2

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4 - The difference of 111 - 001 equals

1. 100
2. 111
3. 001
4. 110

Correct Choice : 4

From Lectuer # 2

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5 - The Unsigned Binary representation can only represent positive binary numbers

1. TRUE
2. FALSE
- 3.
- 4.

Correct Choice : 1

From Lectuer # 2

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6 - which of the following rules states that if one input of an AND gate is always 1, the output is equal to the other input?

1. $A + 1 = 1$
2. $A + A = A$
3. $A.A = A$
4. $A.1 = A$



Correct Choice : 3

From Lectuer # 2

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7 - Which of the number is not a representative of hexadecimal system

1. 1234
2. ABCD
3. 1001
4. DEFH

Correct Choice : 4

From Lectuer # 2

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8 - Which one of the following is NOT a valid rule of Boolean algebra?

1. $A = A'$
2. $AA = A$
3. $A + 1 = 1$
4. $A + 0 = A$

Correct Choice : 1

From Lectuer # 2

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9 - In the binary number ' 10011 ' the weight of the most significant digit is _____

1. 2^4 (2 raise to power 4)
2. 2^3 (2 raise to power 3)
3. 2^0 (2 raise to power 0)
4. 2^1 (2 raise to power 1)

Correct Choice : 1

From Lectuer # 2

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10 - The binary value ' 1010110 ' is equivalent to decimal _____

1. 86
2. 87
3. 88
4. 89

Correct Choice : 1

From Lectuer # 2

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11 - 2's complement of hexadecimal number B70A is

1. B70B
2. B709
3. 48F6
4. 48F5

Correct Choice : 3

From Lectuer # 2

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12 - 2's complement of 5 is

1. 1101
2. 1011
3. 0101
4. 1100



Correct Choice : 3

From Lectuer # 2

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13 - The 4-bit 2's complement representation of ' -7 ' is _____

1. 111
2. 1111
3. 1001
4. 110

Correct Choice : 3

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14 - The values that exceed the specified range can not be correctly represented and are considered as _____

1. Overflow
2. Carry
3. Parity
4. Sign value

Correct Choice : 1

From Lectuer # 3

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15 - If we multiply ' 723 ' and ' 34 ' by representing them in floating point notation i.e. by first, converting them in floating point representation and then multiplying them, the value of mantissa of result will be _____

1. 24.582
2. 2.4582
3. 24582
4. 0.24582

Correct Choice : 1

From Lectuer # 3

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16 - The output of the expression $F=A+B+C$ will be Logic _____ when $A=0$, $B=1$, $C=1$. the symbol ' + ' here represents OR Gate.

1. Undefined
2. One
3. Zero
4. 10 (binary)

Correct Choice : 2

From Lectuer # 3

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17 - If we add ' 723 ' and ' 134 ' by representing them in floating point notation i.e. by first, converting them in floating point representation and then adding them, the value of exponent of result will be _____

1. 0
2. 1
3. 2
4. 3

Correct Choice : 3

From Lectuer # 3

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18 - In ANSI/IEEE Standard 754 ' Mantissa ' is represented by _____ bits

1. 8-bits
2. 16-bits
3. 23-bits
4. 64-bits

Correct Choice : 3

From Lectuer # 3

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19 - A BCD to 7-Segment decoder has

1. 3 inputs and 7 outputs
2. 4 inputs and 7 outputs
3. 7 inputs and 3 outputs
4. 7 inputs and 4 outputs

Correct Choice : 2

From Lectuer # 4

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20 - The decimal 8 is represented as _____ using Gray Code.

1. 11
2. 1100
3. 1000
4. 1010

Correct Choice : 2

From Lectuer # 4

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21 - A NAND gate's output is LOW if

1. all inputs are LOW
2. all inputs are HIGH
3. any input is LOW
4. any input is HIGH

Correct Choice : 2

From Lectuer # 5

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22 - NOR Gate can be used to perform the operation of AND, OR and NOT Gate

1. FALSE
2. TRUE
- 3.
- 4.

Correct Choice : 1

From Lectuer # 5

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23 - NOR gate is formed by connecting _____

1. OR Gate and then NOT Gate
2. NOT Gate and then OR Gate
3. AND Gate and then OR Gate
4. OR Gate and then AND Gate

Correct Choice : 3

From Lectuer # 5

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24 - The AND Gate performs a logical _____ function

1. Addition
2. Subtraction
3. Multiplication
4. Division

Correct Choice : 3

From Lectuer # 5

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25 - The Extended ASCII Code (American Standard Code for Information Interchange) is a _____ code

1. 2-bit
2. 7-bit
3. 8-bit
4. 16-bit

Correct Choice : 3

From Lectuer # 5

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26 - The OR gate performs Boolean _____.

1. multiplication
2. subtraction
3. division
4. addition

Correct Choice : 4

From Lectuer # 5

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27 - The output of an AND gate is one when _____

1. All of the inputs are one
2. Any of the input is one
3. Any of the input is zero
4. All the inputs are zero

Correct Choice : 1

From Lectuer # 5

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28 - A NOR's gate output is HIGH if

1. all inputs are HIGH
2. any input is HIGH
3. any input is LOW
4. all inputs are LOW

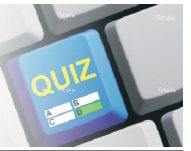
Correct Choice : 4

From Lectuer # 5

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29 - One advantage TTL has over CMOS is that TTL is

1. less expensive
2. not sensitive to electrostatic discharge
3. faster
4. more widely available



Correct Choice : 2

From Lectuer # 6

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30 - Fan-out is specified in terms of

1. voltage
2. current
3. watt
4. unit loads

Correct Choice : 4

From Lectuer # 7

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31 - Generally, the Power dissipation of _____ devices remains constant throughout their operation.

1. TTL
2. CMOS 3.5 series
3. CMOS 5 Series
4. Power dissipation of all circuits increases with time.

Correct Choice : 1

From Lectuer # 7

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32 - Which one is true:

1. Power consumption of TTL is higher than of CMOS
2. Power consumption of CMOS is higher than of TTL
3. Both TTL and CMOS have same power consumption
4. Power consumption of both CMOS and TTL depends on no. of gates in the circuit.

Correct Choice : 1

From Lectuer # 7

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33 - 3.3 v CMOS series is characterized by _____ and _____ as compared to the 5 v CMOS series.

1. Low switching speeds, high power dissipation
2. Fast switching speeds, high power dissipation
3. Fast switching speeds, very low power dissipation
4. Low switching speeds, very low power dissipation

Correct Choice : 3

From Lectuer # 7

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34 - 8-bit parallel data can be converted into serial data by using _____ multiplexer

1. 4-to-2
2. 4-to-4
3. 8-to-1
4. 8-to-4

Correct Choice : 3

From Lectuer # 8

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35 - A logic circuit with an output $X = A(\text{Bar})BC + AB(\text{Bar})$ consists of _____.

1. two AND gates, two OR gates, two inverters



2. three AND gates, two OR gates, one inverter
3. two AND gates, one OR gate, two inverters
4. two AND gates, one OR gate

Correct Choice : 3

From Lectuer # 8

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36 - the boolean expression $AB'CD$'s

1. a sumterm
2. a product term
3. a literal term
4. always 1

Correct Choice : 2

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37 - The boolean expression $X = AB + CD$ represents

1. two ORs ANDed together
2. a 4-input AND gate
3. two ANDs ORed together
4. an exclusive-Or

Correct Choice : 3

From Lectuer # 8

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38 - The expression _____ is an example of Commutative Law for Multiplication.

1. $AB+C = A+BC$
2. $A(B+C) = B(A+C)$
3. $AB=BA$
4. $A+B=B+A$

Correct Choice : 3

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39 - To implement the expression $AB(\text{bar})CD + ABC(\text{bar})D + ABCD(\text{bar})$, it takes one OR gate and

1. three AND gates and three inverters
2. three AND gates and four inverters
3. three AND gates
4. one AND gate

Correct Choice : 1

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40 - the boolean expression $A + B' + C$ is

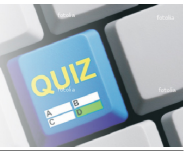
1. a sum term
2. a literal term
3. a product term
4. a complemented term

Correct Choice : 1

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41 - The minterm expansion for $F(A,B,C) = (A + B + C)(A + B' + C')(A' + B + C')(A' + B' + C)$ is



1. $F(A,B,C) = \prod M(0,3,5,6)$
2. $F(A,B,C) = \sum m(0,3,5,6)$
3. $F(A,B,C) = \sum m(0,3,5,6)$
4. $F(A,B,C) = \sum m(1,2,4,7)$

Correct Choice : 1

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42 - $(A+B).(A+C) =$ _____

1. $B+C$
2. $A+BC$
3. $AB+C$
4. $AC+B$

Correct Choice : 2

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43 - $A(\bar{B}) + A(\bar{B})BC(\bar{B}) + AC$ is an example of _____

1. Product of sum form
2. Sum of product form
3. Demorgans law
4. Associative law

Correct Choice : 2

From Lectuer # 8

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44 - An example of SOP expression is

1. $A + B(C + D)$
2. $A'B + AC' + AB'C$
3. $(A' + B + C)(A + B' + C)$
4. both (a) and (b)

Correct Choice : 2

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45 - Determine the values of A, B, C, and D that make the sum term $A(\bar{B}) + B+C(\bar{B})+D$ equal to zero.

1. $A = 1, B = 0, C = 0, D = 0$
2. $A = 1, B = 0, C = 1, D = 0$
3. $A = 0, B = 1, C = 0, D = 0$
4. $A = 1, B = 0, C = 1, D = 1$

Correct Choice : 2

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46 - The binary value of 1010 is converted to the product term $A(\bar{B})BC(\bar{B})D$

1. TRUE
2. FALSE
- 3.
- 4.

Correct Choice : 2

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47 - The boolean expression $A + BC$ equals



1. $(A' + B)(A' + C)$
2. $(A + B)(A + C)$
3. $(A + B)(A' + C)$
4. none of the above

Correct Choice : 2

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48 - $A.(B + C) = A.B + A.C$ is the expression of _____

1. Demorgan's Law
2. Commutative Law
3. Distributive Law
4. Associative Law

Correct Choice : 3

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49 - According to Demorgan's theorem: $(A+B+C)\text{bar} =$ _____

1. $A.B.C$
2. $A+(B.C)\text{Bar}$
3. $A(\text{Bar}).B(\text{Bar}).C(\text{Bar})$
4. $A.B(\text{Bar})+C$

Correct Choice : 3

From Lectuer # 8

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50 - High level Noise Margins (VNH) of CMOS 5 volt series circuits is _____

1. 0.3 V
2. 0.5 V
3. 0.9 V
4. 3.3 V

Correct Choice : 3

From Lectuer # 8

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51 - $A.(B.C) = (A.B).C$ is an expression of _____

1. Demorgan's Law
2. Distributive Law
3. Commutative Law
4. Associative Law

Correct Choice : 4

From Lectuer # 8

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52 - A non-standard POS is converted into a standard POS by using the rule _____

1. $A+A(\text{bar}) = 1$
2. $AA(\text{bar}) = 0$
3. $1+A=1$
4. $A+B = B+A$

Correct Choice : 1

From Lectuer # 9

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53 - Following is standard POS expression

$(A+B(\text{bar})+C+D(\text{bar}))(A+B(\text{bar})+C+D)(A+B+C(\text{bar})+D(\text{bar}))(A+B+C+D(\text{bar}))(A+B(\text{bar})+C(b$



ar)+D)

1. TRUE
2. FALSE
- 3.
- 4.

Correct Choice : 1

From Lectuer # 9

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54 - A Karnaugh map is similar to a truth table because it presents all the possible values of input variables and the resulting output of each value.

1. TRUE
2. FALSE
- 3.
- 4.

Correct Choice : 1

From Lectuer # 10

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55 - A SOP expression is equal to 1 _____

1. All the variables in domain of expression are present
2. At least one variable in domain of expression is present.
3. When one or more product terms in the expression are equal to 0.
4. When one or more product terms in the expression are equal to 1.

Correct Choice : 4

From Lectuer # 10

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56 - In a 4-variable K-map, a 2-variable product term is produced by

1. a 2-cell group of 1s
2. a 8-cell group of 1s
3. a 4-cell group of 1s
4. a 4-cell group of 0s

Correct Choice : 3

From Lectuer # 10

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57 - The 3-variable Karnaugh Map (K-Map) has _____ cells for min or max terms

1. 4
2. 8
3. 12
4. 16

Correct Choice : 2

From Lectuer # 10

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58 - The 4-variable Karnaugh Map (K-Map) has _____ cells for min or max terms

1. 4
2. 8
3. 12
4. 16



Correct Choice : 4

From Lectuer # 10

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59 - On a Karnaugh map, grouping the 0s produces

1. a POS expression
2. a SOP expression
3. a "don't care" condition
4. AND-OR logic

Correct Choice : 1

From Lectuer # 11

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60 - A 5-variable karnaugh map has

1. 16
2. 32
3. 64
4. None

Correct Choice : 2

From Lectuer # 11

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61 - The binary numbers $A = 1100$ and $B = 1001$ are applied to the inputs of a comparator. What are the output levels?

1. $A > B = 1, A < B = 0, A = B = 1$
2. $A > B = 0, A < B = 1, A = B = 0$
3. $A > B = 1, A < B = 0, A = B = 0$
4. $A > B = 0, A < B = 1, A = B = 1$

Correct Choice : 3

From Lectuer # 12

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62 - Adjacent 1s detector circuit will have active low output for the input

1. 1101
2. 1010
3. 0110
4. 1011

Correct Choice : 2

From Lectuer # 13

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63 - Circuits having a bubble at their outputs are considered to have an active-low output.

1. TRUE
2. FALSE
- 3.
- 4.

Correct Choice : 1

From Lectuer # 13

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64 - Which gate is best used as a basic comparator?

1. NOR
2. OR
3. exclusive-OR



4. AND

Correct Choice : 3

From Lectuer # 13

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65 - A particular Full Adder has

1. 3 inputs and 2 output
2. 3 inputs and 3 output
3. 2 inputs and 3 output
4. 2 inputs and 2 output

Correct Choice : 1

From Lectuer # 14

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66 - Half-Adder Logic circuit contains _____ XOR Gates.

1. 1
2. 2
3. 4
4. 6

Correct Choice : 1

From Lectuer # 14

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67 - Half-Adder Logic circuit contains 2 XOR Gates

1. TRUE
2. FALSE
- 3.
- 4.

Correct Choice : 2

From Lectuer # 14

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68 - The function to be performed by the processor is selected by set of inputs known as _____

1. Function Select Inputs
2. Micro Operation selectors
3. OPCODE Selectors
4. None of given option

Correct Choice : 1

From Lectuer # 15

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69 - Two 2-bit comparator circuits can be connected to form single 4-bit comparator

1. TRUE
2. FALSE
- 3.
- 4.

Correct Choice : 1

From Lectuer # 16

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70 - For a 3-to-8 decoder how many 2-to-4 decoders will be required?

1. 4
2. 3



- 3. 2
- 4. 1

Correct Choice : 3

From Lectuer # 17

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71 - Decimal-to-BCD

- 1. 2
- 2. 4
- 3. 10
- 4. 16

Correct Choice : 2

From Lectuer # 17

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72 - If ' 1110 ' is applied at the input of BCD-to-Decimal decoder which output pin will be activated:

- 1. 2nd
- 2. 3rd
- 3. 4h
- 4. No output will be activated

Correct Choice : 3

From Lectuer # 17

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73 - The _____ Encoder is used as a keypad encoder.

- 1. 2-to-8 encoder
- 2. 4-to-16 encoder
- 3. BCD-to-Decimal
- 4. Decimal-to-BCD Priority

Correct Choice : 3

From Lectuer # 17

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74 - Two 2-input, 4-bit multiplexers 74X157 can be connected to implement a _____ multiplexer.

- 1. 4-input, 8-bit
- 2. 4-input, 16-bit
- 3. 2-input, 8-bit
- 4. 2-input, 4-bit

Correct Choice : 3

From Lectuer # 18

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75 - Using multiplexer as parallel to serial converter requires _____ connected to the multiplexer

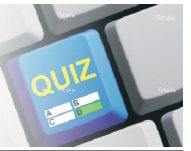
- 1. A parallel to serial converter circuit
- 2. A counter circuit
- 3. A BCD to Decimal decoder
- 4. A 2-to-8 bit decoder

Correct Choice : 1

From Lectuer # 18

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76 - A demultiplexer has



1. one input and several outputs
2. one input and one output
3. several inputs and several outputs
4. several inputs and one output

Correct Choice : 1

From Lectuer # 19

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77 - A Demultiplexer is not available commercially.

1. TRUE
2. FALSE
- 3.
- 4.

Correct Choice : 1

From Lectuer # 19

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78 - Demultiplexer can also be used as

1. Deselector
2. Decoder
3. Distributer
4. Encoder

Correct Choice : 3

From Lectuer # 19

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79 - Demultiplexer has

1. Single input and single outputs.
2. Multiple inputs and multiple outputs.
3. Single input and multiple outputs.
4. Multiple inputs and single output.

Correct Choice : 3

From Lectuer # 19

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80 - The main use of the Multiplexer is to

1. Select data from multiple sources and to route it to a single Destination
2. Select data from Single source and to route it to a multiple Destinations
3. Select data from Single source and to route to single destination
4. Select data from multiple sources and to route to multiple destinations

Correct Choice : 1

From Lectuer # 19

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81 - The PROM consists of a fixed non-programmable _____ Gate array configured as a decoder.

1. AND
2. OR
3. NOT
4. XOR

Correct Choice : 1

From Lectuer # 19

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82 - The range of Excess-8 code is from _____ to _____



1. +7 to -8
2. +8 to -7
3. +9 to -8
4. -9 to +8

Correct Choice : 1

From Lectuer # 19

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83 - Tri-State Buffer is basically a/an _____ gate.

1. AND
2. OR
3. NOT
4. XOR

Correct Choice : 3

From Lectuer # 19

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84 - When the control line in tri-state buffer is high the buffer operates like a _____ gate

1. AND
2. OR
3. NOT
4. XOR

Correct Choice : 3

From Lectuer # 19

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85 - ABEL is an acronym for

1. Advanced Broadband Enabled Longitude
2. Advanced Boolean Equation Language
3. None of the given options
4. Advanced Boolean Expression Language

Correct Choice : 4

From Lectuer # 20

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86 - GAL can be reprogrammed because instead of fuses _____ logic is used in it

1. E²CMOS
2. TTL
3. CMOS+
4. None of the given options

Correct Choice : 1

From Lectuer # 20

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87 - GAL is an acronym for _____.

1. Giant Array Logic
2. General Array Logic
3. Generic Array Logic
4. Generic Analysis Logic

Correct Choice : 1

From Lectuer # 20

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88 - The GAL22V10 has _____ inputs



1. 22
2. 10
3. 44
4. 20

Correct Choice : 2

From Lectuer # 20

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89 - The maximum number that can be represented using unsigned octal system is

1. 1
2. 7
3. 9
4. 16

Correct Choice : 1

From Lectuer # 20

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90 - The ABEL symbol for ' XOR ' operation is

1. \$
2. #
3. !
4. &

Correct Choice : 1

From Lectuer # 20

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91 - In ABEL the variable A is treated separately from variable a

1. True
2. FALSE
- 3.
- 4.

Correct Choice : 1

From Lectuer # 20

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92 - All the ABEL equations must end with _____

1. ' . ' (a dot)
2. ' \$ ' (a dollar symbol)
3. ' ; ' (a semicolon)
4. ' endl ' (keyword 'endl')

Correct Choice : 3

From Lectuer # 20

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93 - The ABEL symbol for ' OR ' operation is

1. &
2. !
3. #
4. \$

Correct Choice : 3

From Lectuer # 20

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94 - The ABEL notation equivalent to Boolean expression $A+B$ is:



1. A & B
2. A ! B
3. A # B
4. A \$ B

Correct Choice : 3

From Lectuer # 21

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95 - The OLMC of the GAL16V8 is _____ to the OLMC of the GAL22V10

1. Similar
2. Different
3. Similar with some enhancements
4. Depends on the type of PALs input size

Correct Choice : 1

From Lectuer # 21

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96 - A latch has _____ stable states

1. One
2. Two
3. Three
4. Four

Correct Choice : 2

From Lectuer # 22

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97 - An S-R latch can be implemented by using _____ gates

1. AND, OR
2. NAND, NOR
3. NAND, XOR
4. NOT, XOR

Correct Choice : 2

From Lectuer # 22

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98 - Caveman number system is Base _____ number system

1. 2
2. 5
3. 10
4. 16

Correct Choice : 2

From Lectuer # 22

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99 - If an active-HIGH S-R latch has a 0 on the S input and a 1 on the R input and then the R input goes to 0, the latch will be _____.B1

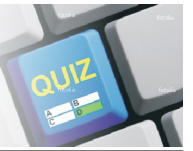
1. SET
2. RESET
3. Clear
4. Invalid

Correct Choice : 2

From Lectuer # 22

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100 - If an S-R latch has a 1 on the S input and a 0 on the R input and then the S input



goes to 0, the latch will be

1. set
2. reset
3. invalid
4. clear

Correct Choice : 1

From Lectuer # 22

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101 - The Quad Multiplexer has _____ outputs

1. 4
2. 8
3. 16
4. 12

Correct Choice : 1

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