CS302 Digital Logic Design Solved Objective Midterm Papers
For Preparation of Midterm Exam
Question No: 1 (Marks: 1) - Please choose one
A SOP expression is equal to 1 ____________

► All the variables in domain of expression are present
► At least one variable in domain of expression is present.
► When one or more product terms in the expression are equal to 0.
► When one or more product terms in the expression are equal to 1. (Page 86)

Question No: 2 (Marks: 1) - Please choose one
The output A < B is set to 1 when the input combinations is __________

► A=10, B=01
► A=11, B=01
► A=01, B=01
► A=01, B=10 (Page 109)

Question No: 3 (Marks: 1) - Please choose one
Two 2-bit comparator circuits can be connected to form single 4-bit comparator

► True (Page 154)
► False

Question No: 4 (Marks: 1) - Please choose one
High level Noise Margins (V_{NH}) of CMOS 5 volt series circuits is __________

► 0.3 V
► 0.5 V
► 0.9 V (Page 65)
► 3.3 V

Question No: 5 (Marks: 1) - Please choose one
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 __________

► 24.582 (But not sure)
► 2.4582
► 24582
► 0.24582

Question No: 6 (Marks: 1) - Please choose one
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.

- Undefined
- One
- Zero
- 10 (binary)

**Question No: 7  (Marks: 1)  - Please choose one**

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 ________.

- SET (page 220)
- RESET
- Clear
- Invalid

**Question No: 8  (Marks: 1)  - Please choose one**

3.3 v CMOS series is characterized by_________ and _________ as compared to the 5 v CMOS series.

- Low switching speeds, high power dissipation
- Fast switching speeds, high power dissipation
- **Fast switching speeds, very low power dissipation** (page61)
- Low switching speeds, very low power dissipation

**Question No: 9  (Marks: 1)  - Please choose one**

The binary value “1010110” is equivalent to decimal __________

- 86 (According to Formula)
- 87
- 88
- 89

**Question No: 10  (Marks: 1)  - Please choose one**

The_________ Encoder is used as a keypad encoder.

- 2-to-8 encoder
- 4-to-16 encoder
- BCD-to-Decimal
- **Decimal-to-BCD Priority** (Page 166)
Question No: 11  (Marks: 1) - Please choose one
How many data select lines are required for selecting eight inputs?

► 1
► 2
► 3  click here for detail

Question No: 12  (Marks: 1) - Please choose one

the diagram above shows the general implementation of ________ form
► boolean
► arbitrary
► POS
► SOP

Question No: 13  (Marks: 1) - Please choose one
The Quad Multiplexer has ______ outputs
► 4  (Page 217)
► 8
► 12
► 16

Question No: 14  (Marks: 1) - Please choose one
Demultiplexer has

► Single input and single outputs.
► Multiple inputs and multiple outputs.
► Single input and multiple outputs,  (Page 178)
► Multiple inputs and single output.

Question No: 15  (Marks: 1) - Please choose one
The expression ________ is an example of Commutative Law for Multiplication.

► AB+C = A+BC
► A(B+C) = B(A+C)
► AB=BA  (Page 72)
► A+B=B+A
Question No: 16 (Marks: 1) - Please choose one
“Sum-of-Weights” method is used __________
► to convert from non-numeric system to other (Page 14)
► to encode data
► to decode data
► to convert from serial to parallel data

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Spring 2010

Question No: 1 (Marks: 1) - Please choose one
The maximum number that can be represented using unsigned octal system is ________
► 1
► 7 (Page 31)
► 9
► 16

Question No: 2 (Marks: 1) - Please choose one
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 ________
► 0
► 1
► 2 (Page 26)
► 3

Question No: 3 (Marks: 1) - Please choose one
The diagram given below represents ________

► Demorgans law
► Associative law
► Product of sum form (According to rule of theorem)
► Sum of product form
Question No: 4  (Marks: 1)  - Please choose one
The range of Excess-8 code is from_____ to _____
►+7to-8 (Page 34)
►+8 to -7
►+9 to -8
►-9 to +8

Question No: 5  (Marks: 1)  - Please choose one
A non-standard POS is converted into a standard POS by using the rule _____.
►1+A≤0  (Page 85)
►
►A+B = B+A

Question No: 6  (Marks: 1)  - Please choose one
The 3-variable Karnaugh Map (K-Map) has______cells for min or max terms
►4
►8 (Page 89)
►12
►16

Question No: 7  (Marks: 1)  - Please choose one
The binary numbers A = 1100 and B = 1001 are applied to the inputs of a comparator. What are the output levels?
►A > B = 1, A < B = 0, A < B = 1
►A > B = 0, A < B = 1, A = B = 0
►A>0.A<B=0,A=B=0 (Page 109)
►A > B = 0, A < B = 1, A = B = 1

Question No: 8  (Marks: 1)  - Please choose one
A particular Full Adder has
►3inputsand2output  (Page 135)
►3 inputs and 3 output
►2 inputs and 3 output
►2 inputs and 2 output

Question No: 9  (Marks: 1)  - Please choose one
The function to be performed by the processor is selected by set of inputs known as ________
►FunctionSelectInputs (Page 147)
►MicroOperation selectors
►OPCODE Selectors
►None of given option
Question No: 10  (Marks: 1)  - Please choose one
For a 3-to-8 decoder how many 2-to-4 decoders will be required?

► 2  (Page 160)
► 1
► 3
► 4

Question No: 11  (Marks: 1)  - Please choose one
GAL is an acronym for ________.

► Giant Array Logic
► General Array Logic  (Page 183)
► Generic Array Logic
► Generic Analysis Logic

Question No: 12  (Marks: 1)  - Please choose one
The Quad Multiplexer has _____ outputs

► 4  (Page 216)
► 8
► 12
► 16

Question No: 13  (Marks: 1)  - Please choose one
A.(B.C) = (A.B).C is an expression of ________

► Demorgan’s Law
► Distributive Law
► Commutative Law
► Associative Law  (Page 72)

Question No: 14  (Marks: 1)  - Please choose one
2's complement of any binary number can be calculated by

► adding 1's complement twice
► adding1to1'scomplement  (Page 144)
► subtracting 1 from 1's complement.
► calculating 1's complement and inverting Most significant bit

Question No: 15  (Marks: 1)  - Please choose one
The binary value “1010110” is equivalent to decimal ________

► 86  (Accordingtoformula)
► 87
► 88
► 89
Question No: 16 (Marks: 1) - Please choose one
Tri-State Buffer is basically an/and_______ gate.

► AND
► OR
► NOT
► XOR (Page186)

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1. The binary value “11011” is equivalent to ________

► 1B (According to rule)
► 1C
► 1D
► 1E

2. An important application of AND Gate is its use in counter circuit

► True (Page 281)
► False

3. The OR Gate performs a Boolean______ function

► Addition (Page 42)
► Subtraction
► Multiplication
► Division

4. TTL based devices work with a dc supply of____ Volts

► +10
► +5 (Page 61)
► +3
► 3.3

5. A standard POS form has _______ terms that have all the variables in the domain of the expression

► Sum (Page 85)
► Product
► Min
► Composite
6. A SOP expression having a domain of 3 variables will have a truth table having ____ combinations of inputs and corresponding output values.

- 2
- 4
- 8 (According to rule)
- 16

7. A BCD to 7-Segment decoder has

- 3 inputs and 7 outputs
- 4 inputs and 7 outputs (Page 103)
- 7 inputs and 3 outputs
- 5 inputs and 4 outputs

![Karnaugh Map]

In the Karnaugh map shown above, which of the loops shown represents a legal grouping?

- A
- C  [click here for detail]
- D

8. The binary value of 1010 is converted to the product term \( \overline{A} \overline{B} \overline{C} \overline{D} \)

- True
- False

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

- \( A > B = 1, A < B = 0, A < B = 1 \)
- \( A > B = 0, A < B = 1, A = B = 0 \)
- \( A > B = 1, A < B = 0, A = B = 0 \) (Page 109)
- \( A > B = 0, A < B = 1, A = B = 1 \)
\[ C_{out1} + S_3(S_2 + S_1) \]

11. is boolean expression for

- Half Adder
- Full Adder
- The Invalid BCD Detector Circuit (page 142)
- Parity Checker

12. 3-to-8 decoder can be used to implement Standard SOP and POS Boolean expressions

- True (Page 160)
- False

13. The device shown here is most likely a ______

14. The GAL22V10 has ___ inputs

- 22 (Page 195)
- 10
- 44
- 20

15. A latch retains the state unless

- Power is turned off
- Input is changed (page 218)
- Output is changed
- Clock pulse is changed
16. 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________.

- SET  (Page 220)
- RESET
- Clear
- Invalid

Consider a circuit consisting of two consecutive NOT gates, the entire circuit belongs to a CMOS 5 Volt series, if certain voltage is applied on the input, the output voltage of Logic high signal (V_{oh}) will be in the range of_____volts.

- 4 to 4.5
- 4.5 to 5
- 0 to 4.5
- 0 to 3.5

A.(B.C) = (A.B).C is an expression of __

- Demorgan’s Law
- Distributive Law
- Commutative Law
- **Associative Law** (Page 72)

17. The 4-bit 2’s complement representation of “+5” is _____________

- 1010
- 1110
- **1011**
- 0101

18. Which of the number is not a representative of hexadecimal system

- 1234
- ABCD
- **1001**  
  Hexa does not have H as remainder
- DEHF

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Question No: 1  (Marks: 1)  - Please choose one

- 1
- **7**
Question No: 2  (Marks: 1) - Please choose one
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 ________

► 0
► 1
► 2  (Page26)
► 3

Question No: 3  (Marks: 1) - Please choose one
The diagram given below represents __________

Diagram

► Demorgans law
► Associative law
► Product of sum form  (According to rule)
► Sum of product form

Question No: 4  (Marks: 1) - Please choose one
The range of Excess-8 code is from ______ to ______

► +7 to +8  (Page 34)
► +8 to -7
► +9 to -8
► -9 to +8

Question No: 5  (Marks: 1) - Please choose one
A non-standard POS is converted into a standard POS by using the rule _____

\[ A + A = 1 \]

► \[ \frac{1}{A} + A = 1 \]  (Page 85)
► 
► A+B = B+A
Question No: 6  (Marks: 1) - Please choose one
The 3-variable Karnaugh Map (K-Map) has_________cells for min or max terms

► 4
► 8 (Page 89)
► 12
► 16

Question No: 7  (Marks: 1) - Please choose one
The binary numbers A = 1100 and B = 1001 are applied to the inputs of a comparator. What are the output levels?

► A > B = 1, A < B = 0, A < B = 1
► A > B = 0, A < B = 1, A = B = 0
► A > B = 1, A < B = 0, A = B = 0 (Page 109)
► A > B = 0, A < B = 1, A = B = 1

Question No: 8  (Marks: 1) - Please choose one
A particular Full Adder has

► 3 inputs and 2 output (Page 135)
► 3 inputs and 3 output
► 2 inputs and 3 output
► 2 inputs and 2 output

Question No: 9  (Marks: 1) - Please choose one
The function to be performed by the processor is selected by set of inputs known as ____

► FunctionSelectInputs (Page 147)
► MicroOperation selectors
► OPCODE Selectors
► None of given option

Question No: 10  (Marks: 1) - Please choose one
For a 3-to-8 decoder how many 2-to-4 decoders will be required?

► 2 (Page 160)
► 1
► 3
► 4

Question No: 11  (Marks: 1) - Please choose one
GAL is an acronym for ________.
► Giant Array Logic
► General Array Logic (Page 183)
► Generic Array Logic
► Generic Analysis Logic
Question No: 12  (Marks: 1) - Please choose one
The Quad Multiplexer has_____outputs

► 4 (Page 216)
► 8
► 12
► 16

Question No: 13  (Marks: 1) - Please choose one
A.(B.C) = (A.B).C is an expression of _________

► Demorgan’s Law
► Distributive Law
► Commutative Law
► Associative Law (Page 72)

Question No: 14  (Marks: 1) - Please choose one
2's complement of any binary number can be calculated by

► adding 1's complement twice
► adding1to1'scomplement_____ (Page 144)
► subtracting 1 from 1's complement.
► calculating 1's complement and inverting Most significant bit

Question No: 15  (Marks: 1) - Please choose one
The binary value “1010110” is equivalent to decimal _________

► 86 (According to formula)
► 87
► 88
► 89

Question No: 16  (Marks: 1) - Please choose one
Tri-State Buffer is basically a/an_______gate.

► AND
► OR
► NOT (page196)
► XOR
MIDTERM EXAMINATION
Spring 2009
CS302- Digital Logic Design (Session - 1)
Question No: 1 (Marks: 1) - Please choose one
GAL can be reprogrammed because instead of fuses logic is used in it

- E²CMOS (Page 191)
- TTL
- CMOS+
- None of the given options

Question No: 2 (Marks: 1) - Please choose one
The device shown here is most likely a

- Comparator
- Multiplexer click here for detail
- Demultiplexer
- Parity generator

Question No: 3 (Marks: 1) - Please choose one
If “1110” is applied at the input of BCD-to-Decimal decoder which output pin will be activated:

- 2nd
- 4th
- 14th
- No output wire will be activated (Page 163)

Question No: 4 (Marks: 1) - Please choose one
Half-Adder Logic circuit contains 2 XOR Gates
- True
- False (Page 135)

Question No: 5 (Marks: 1) - Please choose one
A particular Full Adder has
- 3 inputs and 2 output (Page 135)
- 3 inputs and 3 output
- 2 inputs and 3 output
- 2 inputs and 2 output

Question No: 6 (Marks: 1) - Please choose one
Sum = A ⊕ B ⊕ C
CarrierOut = C(A ⊕ B) + AB
are the Sum and CarrierOut expression of
► Half Adder
► Full Adder (Page 135)
Question No: 7  (Marks: 1)  - Please choose one
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.

- True [click here for detail]
- False

Question No: 8  (Marks: 1)  - Please choose one
The output \( A < B \) is set to 1 when the input combinations is _________________

- \( A=10, B=01 \)
- \( A=11, B=01 \)
- \( A=01, B=01 \)
- \( A=01, B=10 \) (Page 109)

Question No: 9  (Marks: 1)  - Please choose one
The 4-variable Karnaugh Map (K-Map) has _____ cells for min or max terms

- 4
- 8
- 12
- 16 (Page 90)

Question No: 10  (Marks: 1)  - Please choose one
Generally, the Power dissipation of_____ devices remains constant throughout their operation.

- TTL (Page 65)
- CMOS 3.5 series
- CMOS 5 Series
- Power dissipation of all circuits increases with time.

Question No: 11  (Marks: 1)  - Please choose one
The decimal “8” is represented as______ using Gray-Code.

- 0011
- 1100 (page 36)
- 1000
- 1010

Question No: 12  (Marks: 1)  - Please choose one
\((A+B).(A+C) = \) __________
- B+C
- A+BC (According to rule)
- AB+C
- AC+B
Question No: 13  (Marks: 1)  - Please choose one
A.(B + C) = A.B + A.C is the expression of

- Demorgan’s Law
- Commutative Law
- **Distributive Law** *(Page 73)*
- Associative Law

Question No: 14  (Marks: 1)  - Please choose one
NOR Gate can be used to perform the operation of AND, OR and NOT Gate

- **FALSE** *(Page 50)*
- **TRUE**

Question No: 15  (Marks: 1)  - Please choose one
In ANSI/IEEE Standard 754 “Mantissa” is represented by_______32-bits_______bits

- 8-bits
- 16-bits
- **32-bits** *(Page 24)*
- 64-bits

Question No: 16  (Marks: 1)  - Please choose one
Caveman number system is Base _5_____number system

- 2
- **5** *(Page 11)*
- 10
- 16

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Question No: 17  (Marks: 1)  - Please choose one
According to Demorgan’s theorem:

\[ A + \overline{B.C} \]

- \( A \overline{B.C} \)
- \( A.B.C \)
- **\( A\overline{B} + C \)** *(Page 74)*
Question No: 2 (Marks: 1) - Please choose one
The Extended ASCII Code (American Standard Code for Information Interchange) is a______code

► 2-bit
► 7-bit
► 8-bit (Page 38)
► 16-bit

Question No: 3 (Marks: 1) - Please choose one
The AND Gate performs a logical_________function

► Addition
► Subtraction
► Multiplication (Page 40)
► Division

Question No: 4 (Marks: 1) - Please choose one
NOR gate is formed by connecting________

► OR Gate and then NOT Gate (Page 47)
► NOT Gate and then OR Gate
► AND Gate and then OR Gate
► OR Gate and then AND Gate

Question No: 5 (Marks: 1) - Please choose one
Generally, the Power dissipation of_______devices remains constant throughout their operation.

► TTL (Page 65)
► CMOS 3.5 series
► CMOS 5 Series
► Power dissipation of all circuits increases with time.

Question No: 6 (Marks: 1) - Please choose one
Two 2-bit comparator circuits can be connected to form single 4-bit comparator

► True (Page 154)
► False

Question No: 7 (Marks: 1) - Please choose one
When the control line in tri-state buffer is high the buffer operates like a_________gate
- AND
- OR
- NOT (Page 196)
- XOR
Question No: 8  (Marks: 1) - Please choose one
The GAL22V10 has______inputs

►22 (Page195)
►10
►44
►20

Question No: 9  (Marks: 1) - Please choose one
The ABEL symbol for “OR” operation is

►!
►&
►# (Page 201)
►$

Question No: 10  (Marks: 1) - Please choose one
The OLMC of the GAL16V8 is______to the OLMC of the GAL22V10

► Similar
► Different
► Similar with some enhancements (Page 207)
► Depends on the type of PALs input size

Question No: 11  (Marks: 1) - Please choose one
All the ABEL equations must end with ________

► “.” (a dot)
► “$” (a dollar symbol)
► “:” (asemicolon) (Page201)
► “endl” (keyword “endl”)

Question No: 12  (Marks: 1) - Please choose one
The Quad Multiplexer has______outputs

►4 (Page 216) rep
►8
►12
►16

Question No: 13  (Marks: 1) - Please choose one
"Sum-of-Weights" method is used ________
► to convert from one number system to other (Page 14)
► to encode data
► to decode data
► to convert from serial to parallel data
Question No: 14 (Marks: 1) - Please choose one
Circuits having a bubble at their outputs are considered to have an active-low output.

► True (Page 128)
► False

Question No: 15 (Marks: 1) - Please choose one
\((A + B)(A + B + C)(A + C)\) is an example of __________

► Product of sum form (According to rule)
► Sum of product form
► Demorgans law
► Associative law

Question No: 16 (Marks: 1) - Please choose one
Which one is true:

► Power consumption of TTL is higher than of CMOS (Page 61)
► Power consumption of CMOS is higher than of TTL
► Both TTL and CMOS have same power consumption
► Power consumption of both CMOS and TTL depends on no. of gates in the circuit.

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Question No: 1 (Marks: 1) - Please choose one
In the binary number “10011” the weight of the most significant digit is _____

► \(2^4\) (2 raise to power 4) (Page 13)
► \(2^3\) (2 raise to power 3)
► \(2^0\) (2 raise to power 0)
► \(2^1\) (2 raise to power 1)

Question No: 2 (Marks: 1) - Please choose one
An S-R latch can be implemented by using_________ gates

► AND, OR
► NAND, NOR (Page 218-220)
► NAND, XOR
► NOT, XOR
Question No: 3  (Marks: 1)  - Please choose one
A latch has _____ stable states

► One
► Two (Page 218)
► Three
► Four

Question No: 4  (Marks: 1)  - Please choose one
Sequential circuits have storage elements

► True (Page 8)
► False

Question No: 5  (Marks: 1)  - Please choose one
The ABEL symbol for “XOR” operation is

► $ (Page 210)
► #
► !
► &

Question No: 6  (Marks: 1)  - Please choose one
A Demultiplexer is not available commercially.

► True (Page 178)
► False

Question No: 7  (Marks: 1)  - Please choose one
Using multiplexer as parallel to serial converter requires ________ connected to the multiplexer

► A parallel to serial converter circuit (Page 244)
► A counter circuit
► A BCD to Decimal decoder
► A 2-to-8 bit decoder
Question No: 8 (Marks: 1) - Please choose one

The device shown here is most likely a

- Comparator
- **Multiplexer** [click here for detail]
- Demultiplexer
- Parity generator

Question No: 9 (Marks: 1) - Please choose one

The main use of the Multiplexer is to

- Select data from multiple sources and route it to a single destination
- Select data from single source and to route to multiple destinations
- Select data from single source and to route to single destination

Question No: 10 (Marks: 1) - Please choose one

A logic circuit with an output $X = \overline{A} \overline{B} C + A \overline{B}$ consists of

- two AND gates, two OR gates, two inverters
- three AND gates, two OR gates, one inverter
- **two AND gates, one OR gate, two inverters**
- two AND gates, one OR gate

Question No: 11 (Marks: 1) - Please choose one

The binary value of 1010 is converted to the product term

- True
- **False**

Question No: 12 (Marks: 1) - Please choose one

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

- 4
Question No: 13 (Marks: 1) - Please choose one
Following is standard POS expression

► True  (According to logic)
► False

Question No: 14  (Marks: 1) - Please choose one
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.

► Undefined
► One
► Zero
► 10 (binary)

Question No: 15  (Marks: 1) - Please choose one
The Extended ASCII Code (American Standard Code for Information Interchange) is a_____ code

► 2-bit
► 7-bit
► 8-bit  (Page 38)
► 16-bit

Question No: 16  (Marks: 1) - Please choose one
The diagram given below represents_________

► Demorgans law
► Associative law
► Product of sum form  (According to rule)
► Sum of product form
MIDTERM EXAMINATION
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Question No: 1 (Marks: 1) - Please choose one
Which of the number is not a representative of hexadecimal system

► 1234
► ABCD
► 1001
► **DEFH** Hexa does not have H as remainder

Question No: 2 (Marks: 1) - Please choose one
The Unsigned Binary representation can only represent positive binary numbers

► **True** (Page 21)
► False

Question No: 3 (Marks: 1) - Please choose one
The values that exceed the specified range can not be correctly represented and are considered as ________

► **Overflow** (Page23)
► Carry
► Parity
► Sign value

Question No: 4 (Marks: 1) - Please choose one
The 4-bit 2”s complement representation of “-7” is ____________

► 0111
► 1111
► **1001** (Page 21)
► 0110

Question No: 5 (Marks: 1) - Please choose one
AB + ABC + AC is an example of __________

► Product of sum form
► **Sum of product form** (Page 77)
► Demorgans law
► Associative law
Question No: 6  (Marks: 1)  - Please choose one
The diagram given below represents
► Demorgans law
► Associative law
► Product of sum form
► **Sum of product form**

Question No: 7  (Marks: 1)  - Please choose one
The output of an AND gate is one when
► **All of the inputs are one**
► Any of the input is one
► Any of the input is zero
► All the inputs are zero

Question No: 8  (Marks: 1)  - Please choose one
The 4-variable Karnaugh Map (K-Map) has________cells for min or max terms
► 4
► 8
► 12
► **16  (Page 90)**

Question No: 9  (Marks: 1)  - Please choose one
A BCD to 7-Segment decoder has
► 3 inputs and 7 outputs
► **4 inputs and 7 outputs  (Page 103)**
► 7 inputs and 3 outputs
► 7 inputs and 4 outputs

Question No: 10  (Marks: 1)  - Please choose one
Two 2-input, 4-bit multiplexers 74X157 can be connected to implement a_____multiplexer.
► 4-input, 8-bit
► 4-input, 16-bit
► 2-input, 8-bit
► 2-input, 4-bit (Page 169)
Question No: 11 (Marks: 1) - Please choose one
The PROM consists of a fixed non-programmable__________ gate array configured as a decoder.

► AND (Page 182)
► OR
► NOT
► XOR

Question No: 12 (Marks: 1) - Please choose one
In ABEL the variable „A“ is treated separately from variable „a“

► True (Page 201)
► False

Question No: 13 (Marks: 1) - Please choose one
The ABEL notation equivalent to Boolean expression A+B is:

► A & B
► A ! B
► A # B (Page 201)
► A $ B
L-21

Question No: 14 (Marks: 1) - Please choose one
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__________.

► SET (Page 220)
► RESET
► Clear
► Invalid

Question No: 15 (Marks: 1) - Please choose one
Demultiplexer has

► Single input and single outputs.
► Multiple inputs and multiple outputs.
► Single input and multiple outputs. (Page 178)
► Multiple inputs and single output.

Question No: 16 (Marks: 1) - Please choose one
Which one is true:
► Power consumption of TTL is higher than of CMOS (Page 61)
► Power consumption of CMOS is higher than of TTL
► Both TTL and CMOS have same power consumption
► Power consumption of both CMOS and TTL depends on no. of gates in the circuit.
**MIDTERM EXAMINATION**

**Fall 2009**

**Question No: 1** (Marks: 1) - Please choose one
The first Least Significant digit in decimal number system has

*position 0 and weight equal to 1*
position 1 and weight equal to 0
position 1 and weight equal to 10
position 0 and weight equal to 10

**Question No: 2** (Marks: 1) - Please choose one
The decimal equivalent of the binary number “10011” is

19 *(According to rule)*
99
29
None of given options

**Question No: 3** (Marks: 1) - Please choose one
In ANSI/IEEE Standard 754 “Mantissa” is represented by_____32-bits______bits

► 8-bits
► 16-bits
► **32-bits** *(Page 24)*
► 64-bits

**Question No: 4** (Marks: 1) - Please choose one
The binary value “11011” is equivalent to

1B *(According to rule)*
1C
1D
1E

**Question No: 6** (Marks: 1) - Please choose one
The diagram given below represents
Demorgans law
Associative law

Product of sum form (According to rule)
Sum of product form

Question No: 7  (Marks: 1) - Please choose one
NOR gate is formed by connecting

OR Gate and then NOT Gate  (Page 47)
NOT Gate and then OR Gate
AND Gate and then OR Gate
OR Gate and then AND Gate

Question No: 8  (Marks: 1) - Please choose one
“74ALS” stands for

Advanced Low-frequency Schottky TTL
Advanced Low-dissipation Schottky TTL
Advanced Low-Power Schottky TTL  (Page 61)
Advanced Low-propagation Schottky TTL

Question No: 9  (Marks: 1) - Please choose one
An adder circuit can be used to perform subtraction operation

True  (Page 146)
False

Question No: 10  (Marks: 1) - Please choose one
For a 3-to-8 decoder how many 2-to-4 decoders will be required?

2  (Page 160)
3
4
1

Question No: 11  (Marks: 1) - Please choose one
3-to-8 decoder can be used to implement Standard SOP and POS Boolean expressions

True  Page 161
False

Question No: 12  (Marks: 1) - Please choose one
Two 2-input, 4-bit multiplexers 74X157 can be connected to implement a multiplexer.
2-input, 4-bit
4-input, 8-bit
4-input, 16-bit

2-input, 8-bit (Page 171)
Question No: 13  (Marks: 1) - Please choose one

The four outputs of two 4-input multiplexers, connected to form a 16-input multiplexer, are connected together through a 4-input gate

AND
OR  (Page 171-172)
NAND
XOR

Question No: 14  (Marks: 1) - Please choose one

The Programmable Array Logic (PAL) has AND array and a OR array

Fixed, programmable
Programmable, fixed  (Page 182)
Fixed, fixed
Programmable, programmable

Question No: 15  (Marks: 1) - Please choose one

Sequential circuits have storage elements

True  (Page 218)
False

Question No: 16  (Marks: 1) - Please choose one

Demultiplexer has

Single input and single outputs.
Multiple inputs and multiple outputs.
Single input and multiple outputs.  (Page 178)
Multiple inputs and single output.