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**MIDTERM EXAMINATION**
**CS302- Digital Logic Design**

**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.

**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

**Question No: 3 ( Marks: 1 ) - Please choose one**

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

- ► True
- ► 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
- ► 3.3 V

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**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
- ► 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
- ► 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

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► Low switching speeds, very low power dissipation

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

The binary value "1010110" is equivalent to decimal _____

► 86
► 87
► 88
► 89

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

The _____ Encoder is used as a keypad encoder.

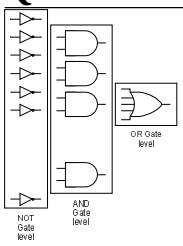
► 2-to-8 encoder
► 4-to-16 encoder
► BCD-to-Decimal
► Decimal-to-BCD Priority

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

How many data select lines are required for selecting eight inputs?

► 1
► 2
► 3
► 4

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




the diagram above shows the general implementation of _____ form

► boolean
► arbitrary
► POS

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► SOP

**Question No: 13 ( Marks: 1 ) - Please choose one**

The Quad Multiplexer has _____ outputs

► 4
► 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.
► 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
► A+B=B+A

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

"Sum-of-Weights" method is used _____

► to convert from one number system to other
► to encode data
► to decode data
► to convert from serial to parralel data

**Question No: 17 ( Marks: 2 )**

**Why a 2-bit comparator is called parallel comparator?**

**Question No: 18 ( Marks: 2 )**

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Explain at least two advantages of the circuit having low power consumption

**Question No: 19 ( Marks: 2 )**

**Name the four OLMC configurations**

**Question No: 20 ( Marks: 3 )**

**Explain "Test Vector" in context of ABEL**

**Question No: 21 ( Marks: 3 )**

For a two bit comparator circuit specify the inputs for which the output A < B is set to 1

**Question No: 22 ( Marks: 5 )**

**Explain Tri-State Buffers with the help of block diagram**

**Question No: 23 ( Marks: 5 )**

**Explain the Operation of Odd-Parity Generator Circuit with the help of timing diagram**

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