



Miss Mehwish: 03171491481

CS302

Final Term (Live Quiz)

PAID VU LMS HANDLING by Mam Mehwish

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Question #1: In designing any counter the transition from a current state to the next state is determined by:

- Only inputs
- current state and outputs
- **Current state and inputs ✓**
- Only current state

Question #2: An Astable multivibrator is known as a(n):

- Dual-shot
- Booster
- One-shot
- **Oscillator ✓**

Question #3: A mono-stable device only has a single stable state:

- **True ✓**
- False



Question #4: A one-shot mono-stable device contains:

- **NAND gate, Resistor, Capacitor and NOT Gate ✓**
- NOR gate, Resistor, Capacitor and NOT Gate
- AND gate, Resistor, Capacitor and NOT Gate
- XNOR gate, Resistor, Capacitor and NOT Gate

Question #5: A 4-bit binary UP/DOWN counter is in the binary state zero. The next state in the DOWN mode is:

- 1000
- **1111 ✓**
- 0001
- 1110

Question #6: The D flip-flop is only activated by:

- None of the given options
- both positive & negative edge trigger
- **a positive edge trigger ✓**
- a negative edge trigger

Question #7: RCO stands for:

- Reconfiguration Counter Output
- Reconfiguration Clock Output
- **Ripple Counter Output ✓**
- Ripple Clock Output



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Question #8: In the keyboard encoder, how many times per second does the ring counter scan the keyboard?

- 625 scans/second ✓
- 600 scans/second
- 650 scans/second
- 700 scans/second

Question #9: According to Moore circuit, the output of synchronous sequential circuit depends on _____ of flip flop.

- Previous State
- Next State
- External Inputs
- Present State ✓

Question #10: The Synchronous counters are also known as Ripple Counters:

- False ✓
- True

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Question #1: The term hold always means _____.

No change ✓

Q=0, \bar{Q} =0

Q=0, \bar{Q} =1

Q=1, \bar{Q} =0



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Question #2: A 4-bit UP/DOWN counter is in DOWN mode and in the 1010 state. On the next clock pulse, to what state does the counter go?

1100

1011

1001

0011

Question #3: The ABEL Input file can use a _____ instead of the equation to specify the Boolean expressions.

Truth Table

Logic Circuit

State Diagram

Karnaugh Map

Question #4: A stable multi-vibrator continuously changes from one unstable state to the other without any_.

External trigger

Output

Flip flop

Variable

Question #5: Number of states in an 8-bit Johnson counter sequence are:

14

12

16



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8

Question #6: The counter states or the range of numbers of a counter is determined by the formula. ("n" represents the total number of flip-flops)

(n raise to power 2)

(2 raise to power n)

(2 raise to power n and then minus 1)

(n raise to power 2 and then minus 1)

Question #7: A modulus-14 counter has fourteen states requiring _____

4 Registers

14 Flip Flops

14 Registers

4 Flip Flops

Question #8: The power consumed by a flip-flop is defined by _____

$P = V_{cc} \times R_{cc}$

$P = I_{cc} \times R_{cc}$

$P = V_{cc} \times I_{cc}$

$P = M_{cc} \times V_{cc}$

Question #9: Bi-stable devices remain in either of their _____ states unless the inputs force the device to switch its state

Eight

Three

Two



Ten

Question #10: Design of state diagram is one of many steps used to design

a truncated counter

any counter

an UP/DOWN counter

a clock

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Question # 1: In moore machine the output depends on

the current state and inputs

only inputs

the current state

the current state and the output of previous flip flop

Question # 2: Karnaugh map is used in designing

All of the above

a clock

a counter

an UP/DOWN counter

Question # 3: The duration for which the elevator doors are opened, and remain open, and time it takes for the elevator to move from one floor to the next can be determined by a/an__.

Input Signal

None of the given options



Clock Signal

Output Signal

Question # 4: Once the state diagram is drawn for any sequential circuit the next step is to draw

Transition table

Next-state table

Logic expression

Karnaugh map

Question # 5: A flip-flop is connected to +5 volts and it draws 5 mA of current during its operation, the power dissipation of the flip-flop is

1024 mW

10 mW

64 mW

25 mW

Question # 6: A 4-bit binary up/down counter is in the binary state of zero. The next state in the UP mode is

1110

1111

0001

1000

Question # 7: A-stable multi-vibrator continuously changes from one unstable state to the other without any _____

External trigger



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Flip flop

Output

Variable

Question # 8: Divide-by-32 counter can be achieved by using

Flip-Flop and DIV 16

Flip-Flop and DIV 32

DIV 16 and DIV 32

Flip-Flop and DIV 10

Question # 9: A flip-flop is presently in SET state and must remain SET on the next clock pulse. What must j and K be?

J = 1, K = X (Don't care)

J = 1, K = 0

J = X (Don't care), K = 0

J = 0, K = X (Don't care)

Question # 10: According to Moore circuit, the output of synchronous sequential circuit depends on _____ of flip flop.

Next State

External Inputs

Previous State

Present State cs302

1. Which mechanism allocates the binary values to the states in order to reduce the cost of the combinational circuits?



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State Evaluation

State Minimization

State Reduction

State Assignment ✓

2. The Test Vector definition defines the test vectors for all the three counter inputs and _____ counter output/outputs.

One ✓

Four

Two

Three

3. In case of cascading Integrated Circuit counters, the enable inputs and RCO of the Integrated Circuit counters allow cascading of multiple counters together.

True ✓

False

4. The 74HC163 is a 4-bit Synchronous Counter. It has _____ data output pins.

Two

Four ✓

Six

Eight

5. Number of states in an 8-bit Johnson counter sequence are:

Eight



Twelve

Sixteen ✓

Fourteen

6. The ABEL Input file can use a _____ instead of the equation to specify the Boolean expressions.

Karnaugh Map ✓

State Diagram

Logic Circuit

Truth Table

7. An Astable multivibrator is known as a(n) _____

Oscillator ✓

One-shot

Booster

Dual-shot

8. A divide-by-10 Johnson counter requires:

Ten flip-flops

Twelve flip-flops

Five flip-flops ✓

Four flip-flops

9. A synchronous decade counter will have _____ flip-flops:



Ten

Seven

Four ✓

Three

10. Divide-by-160 counter is achieved by using:

DIV 16 and DIV 10 ✓

Flip-Flop and DIV 10

Flip-Flop and DIV 16

DIV 16 and DIV 32

11. Development is impossible without domestic _____.

Savings ✓

Debt

Inflation

Unemployment

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Here are the MCQs with all options and the correct option marked with a tick:

Question #1:



A-stable multi-vibrator continuously changes from one unstable state to the other without any_.

- External trigger ✓
- Flip flop
- Variable
- Output

Question #2:

Bi-stable devices remain in either of their _____ states unless the inputs force the device to switch its state.

- Eight
- Ten
- Three
- Two ✓

Question #3:

In synchronous digital circuits the _____ of one flip-flop is connected to the _____ of a second flip-flop.

- Input, Output
- Clock signal, Output



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- Input, clock signal

- Output, input ✓

Question #4:

In 16-input multiplexer, the decoder inputs ____ and ____ enable one out of the four multiplexers.

- C, D

- B, C

- A, B ✓

- A, D

Question #5:

The _____ output has the output of the OR gate connected through an XOR gate to the tri-state buffer.

- PLA

- Programmed Polarity

- Combinational input/

- Combinational ✓



Question #6:

The Synchronous counters are also known as Ripple Counters:

- True
- False ✓

Question #7:

Binary Decoders have _____ inputs and _____ outputs.

- $n, 2^n$ ✓
- $2^n, n$
- n, n
- $1, n$

Question #8:

The GAL16V8 has_.

- 8 pins that are used as inputs or outputs ✓
- All of the given options
- 16 dedicated inputs



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- 8 special function pins

Question #9:

Combinational Logic is used for combinational circuits, where as Registered Logic is based on _____ circuits.

- Multiple

- Consecutive

- Sequential ✓

- Single

Question #10:

If a circuit suffers "Clock Skew" problem, the output of circuit can't be guaranteed.

- True ✓

- False

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Question 1: _____ Counters as the name indicates are not triggered simultaneously.

Positive-Edge triggered



Synchronous

Negative-Edge triggered

Asynchronous

Question 2: _____ is one of the examples of synchronous inputs.

J-K input

EN input

Preset input (PRE)

Clear Input (CLR)

Question 3: The S-R latch has two inputs, therefore _____ different combinations of inputs can be applied to control the operation of the S-R latch.

four

eight

two

sixteen

Question 4: Basic function of a Comparator is to _____ two binary quantities.

Separate

Evaluate

Compare

Simplify

Question 5: If $S=1$ and $R=1$, for negative edge triggered flip-flop then $Q(t+1) =$ _____

Input is invalid



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0

Invalid

1

Question 6: In case of cascading Integrated Circuit counters, the enable inputs and RCO of the Integrated Circuit counters allow cascading of multiple counters together.

True

False

Question 7: Demultiplexer can also be used as

Encoder

Decoder

Inverse multiplexer

Deselector

Question 8: In GAL16V8, each product term is implemented using a 32-bit input _____ gate.

XOR

AND

OR

NAND

Question 9: In Master-Slave flip-flop the Clock signal is connected to Slave flip-flop using _____ gate.

NOT

NAND

OR



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AND

Question 10: For a gated D-Latch if $EN=1$ and $D=1$ then $Q(t+1) =$ _____

Invalid

1

$Q(t)$

0

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Question # 1:

The problem of excessive delays caused by carry propagation can be reduced by a _____ circuit.

Half Adder

Full Adder

Ripple Carry Adder

Carry Look Ahead ✓

Question # 2:

In 8-input multiplexer, the two outputs are connected through a/an _____ gate.

OR ✓

AND

NOT

NOR

Question # 3:

A one-shot mono-stable device contains _____.



XNOR gate, Resistor, Capacitor and NOT Gate

AND gate, Resistor, Capacitor and NOT Gate

NAND gate, Resistor, Capacitor and NOT Gate

NOR gate, Resistor, Capacitor and NOT Gate ✓

Question # 4:

GAL can be reprogrammed as instead of fuses E2CMOS logic is used which can be programmed to connect a _____ with a _____.

row,row

column,column

row,column ✓

column,row

Question # 5:

_____ is one of the examples of synchronous inputs.

J-K input

Clear Input (CLR) ✓

EN input

Preset input (PRE)

Question # 6:

2's complement of 5 is

1101

0101

1100



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1011 ✓

Question # 7:

The active high and active low inputs of 3-to-8 Decoder are as follows:

All active high

All active low

Two active-high and the remaining one is active-low

One active-high and the remaining two are active-low ✓

Question # 8:

A multiplexer circuit has _____ input(s) and _____ output(s).

Multiple, multiple

Single, multiple

Multiple, single ✓

Single, single

Question # 9:

In Complex mode of GAL16V8, OLMCs can be configured in _____ ways.

two

four ✓

three

five

Question # 10:

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

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Fixed, Programmable

Programmable ,Programmable

Programmable, Fixed ✓

Fixed, Fixed

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