جامعة المستقبل

نحو جامعة مستدامة

Al-Mustaqbal University - College of engineering

Department of computer engineering

Second stage

Lecture Week 14

"Preparatory week before the final Exam"

By DR. Mohammed Kadhim Rahma

2025

Frequently Asked Questions on flip flops

1) The output of the sequential circuit depends upon _____

Present input

Past input

Present input and present state

None of the above

2) The flip flops are categorized into _____

One

Two

Three

Four

3) What is the standard form of S-R flip flop?

Set Reset

Simple-Reset

Single-Reset

None of the above

4) When the set is enabled in S-R flip flop then the output will be _____

Set

Reset

No change

Indeterminate

5) When the set is disabled and reset is enabled in S-R flip flop then the output will be

_____

Set

Reset

No change

Indeterminate

6) When both set and reset are disabled in S-R flip flop then the output will be

_____

Set

Reset

No change

Indeterminate

7) When both set and reset are enabled in S-R flip flop then the output will be _____

Set

Reset

No change

Indeterminate

8) In which flip flop the present input will be the next output?

S-R

J-K

D

T

9) The J-K flip flops has _____memory

Temporary

Random

Nonrandom

True

10) The preset input is used to make output _____

Q=1

Q=0

Invalid

No change

11) The clear input is used to make output _____

Q=1

Q=0

Invalid

No change

12) The preset and clear inputs don't need synchronization?

True

False

13). When preset=0, clear=1 then the output will be _____

One

Zero

Not used

FF operation

14). When preset=1, clear=0 then the output will be _____

One

Zero

Not used

FF operation

15) There are total _____steps for flip flop conversions

One

Two

Three

Five

16) In SR to JK flip flop conversion which one is an available flip flop?

SR

JK

T

Both SR and JK

17) In SR to JK flip flop conversion which one is a required flip flop?

SR

JK

T

Both SR and JK

18) The shift registers are categorized into _____

One

Two

Three

Four

19) How many possible conversions are there to convert SR flip flop to other flip flops?

One

Two

Three

Four

20) A flip flop is an _____

Edge sensitive device

Synchronous device

Both a and b

None of the above

21) The operation of the flip flop is slow?

True

False

22) How many types of latches are there?

One

Two

Six

Four

23) The flip flop requires _____

More number of gates

More power

Both a and b

None of the above

24) _____are the applications of flip flop

Registers

Counters

Storage devices

All of the above

25) Does the flip flop based on enable function input?

True

False

26) The flip flops works with _____

Binary inputs

Clock signal

Both a and b

None of the above

27) The flip flop can't be used as a register is it true?

True

False

28) What is the standard form of T flip flop?

Trigger

Toggle

Trigger or toggled

None of the above

29) The JK flip flop convert to other flip flops in _____?

One-way

Two ways

Three ways

Four ways

30) How many types of triggers are there?

One type

Two types

Three types

Four types

31) When S=0, R=0, CLK=X then the output will be _____

No change

Set

Reset

Invalid

32) When reset is low and set is high in a NOR D-latch table then the output will be _____

No change

High

Low

Invalid

33) When reset is high and set is low in a NOR D-latch table then the output will be _____

No change

High

Low

Invalid

34) When reset is high and set is low in a NAND D-latch table then the output will be _____

No change

High

Low

Invalid

35) When reset is low and set is high in a NAND D-latch table then the output will be _____

No change

High

Low

Invalid

36) Which circuit doesn't have a memory unit?

Combinational

Sequential

Both a and b

None of the above

37) _____is an example for sequential circuit

Flip flop

Full adder

Half adder

None of the above

38) _____is an example for combinational circuit

Flip flop

Register

Multiplexer

None of the above

39) How many possible conversions are there to convert T flip flop to other flip flops?

One way

Two ways

Three ways

Four ways

40) What is the standard form of D flip flop?

Data

Deterministic

Delay

None of the above

41) How many inputs does the RS latch have?

One input

Two inputs

Three inputs

Four inputs

42) When triggers on high clock level then this type of trigger is known as _____

High level

Low level

Positive level

Negative level

43) When triggers on low clock level then this type of trigger is known as _____

High level

Low level

Positive level

Negative level

44) The flip flops require _____

More power

More area

Less power

Both a and b

45) The type of operation performed by flip flop is _____

Synchronous

Asynchronous

Both a and b

None of the above

46) The type of operation performed by latches is _____

Synchronous

Asynchronous

Both a and b

None of the above

47) The flip flop is a _____device

Unstable

Bi-stable

Both a and b

None of the above

48) In which year the first flip flop was invented?

1915

1916

1917

1918

49) How many possible conversions are there to convert D flip flop to other flip flops?

One-way

Two ways

Three ways

Four ways

50) Who invented first flip flop?

F.W.Jordan

William Eccles

Harald

Both a and b

51). The set-reset flip flops constructed by cross-coupling of _____gates

AND or NAND

NAND or NOR

XNOR or NOR

None of the above

52) The sequential circuits are categorized into _____

One

Two

Three

Four

53) How many inverters does the basic latch consists of?

One

Two

Three

Four

54) How many additional AND gates does SR flip flop consists of?

One

Two

Three

Four

55) The J-K flip flop characteristic similar to _____flip flop

D flip flop

T flip flop

S-R flip flop

None of the above

56) The latch is a _____device

Unstable

Bistable

Both a and b

None of the above

57) When toggle condition occurs in JK flip flop?

J=1, K=1

J=0, K=0

J=1, K=0

J=0, K=1

58) The no-change conditions occur when _____in JK flip flop

J=1, K=1

J=0, K=0

J=1, K=0

J=0, K=1

59) The flip flop are categorized into _____types

One

Two

Three

Four

60) How many outputs does D-flip flop have?

One

Two

Three

Four

61) When the clock input is low in a D flip flop then the input of the D flip flop is _____

High

Low

No effect

None of the above

62) When the clock input is high and D input is high then the output of a D flip flop will be _____

High

Low

No effect

None of the above

63) The combinational circuit have _____number of stable states

One

Two

Three

Four

64) How many inputs does D flip flop have?

One

Two

Three

Four

65) The flip flops are activated by _____trigger

Only positive edge

Only negative edge

Either positive or negative edge

None of the above

66) The RS flip flop input clock is given to _____

Output

Input

Both a and b

Pulse

67) How many NAND gates does the D flip flop circuit consists of?

One

Two

Three

Four

68) The inputs of the SR, JK, and D flip flop are the _____inputs

Bidirectional

Unidirectional

Synchronous

Asynchronous

69) The counters are categorized into _____

One

Two

Three

Four

70). How many states does the decimal counter have?

One

Ten

Three

Four

71) The synchronous counter is one type of _____counter

SSI

LSI

VLSI

MSI

72) The BCD is one type of counter which is also known as _____

Synchronous

Asynchronous

Parallel

Decade

73) The counter circuit parallel outputs represent _____

Clock count

Serial data word

Parallel data word

None of the above

74) How many of states are there in a 4 bit counter?

One

Four

Eight

Sixteen

75) An IC 7493 is a_____bit binary ripple counter

One

Four

Eight

Sixteen

76) How many JK master-slave flip flops are required for IC 7493?

One

Four

Eight

Sixteen

77) Which IC is a decade counter?

IC 7490

IC 7491

IC 7492

IC 7493

78) How many pins does ripple counter IC have?

4

8

12

14

79) _____type of counter counts in an upward manner

Up counter

Down counter

Decade counter

None of the above

80) In which manner does down counter count?

Upward

Downward

Both a and b

None of the above

81) The high-speed counter is a _____type of counter

Decade counter

Synchronous counter

Asynchronous counter

None of the above

82). The another name for fundamental mode is _____

Clock

Edge

Pulse

None of the above

83) Is it true that the up-down counter is a combination of latches and flip-flops?

True

False

84) How many of states are there in a 3 bit counter?

One

Four

Eight

Sixteen

85) Which one is also called as a multimode counter?

Decade counter

Synchronous counter

Asynchronous counter

Up and down counter

86) _____is a truncated modulus example

Modulus-9

Modulus-15

Modulus-11

All of the above

87) Is register is a type of combinational circuit?

True

False

88) What is the standard form of SISO?

Serial Input Serial Output

Serial Output Serial Input

Simple Input Serial Output

None of the above

89).What is the standard form of PIPO?

Parallel Input Parallel Output

Parallel Output Serial Input

Simple Input Serial Output

None of the above

90). The Johnson and ring shift counters are _____ type of counters

Binary

Synchronous

Asynchronous

None of the above

91) Does an IC 74HC195 use for all SISO, PIPO, SIPO, and PISO operations?

True

False

92) How many bits of information do flip-flop store?

One-bit

Ten-bit

Two-bit

Three-bit

93) The very large scale integration chip is made up of _____

BICMOS, CMOS

BJT, NMOS

Both a and b

None of the above

94) How many of states are there in a 2 bit counter?

One

Four

Eight

Sixteen

95) What is the standard form of SOSI?

Serial Input Serial Output

Serial Output Serial Input

Simple Input Serial Output

None of the above

96).What is the standard form of POSI?

Serial Input Serial Output

Parallel Output Serial Input

Simple Input Serial Output

None of the above

97). Read-only memory consists of _____arrays

OR array

NAND array

Both a and b

None of the above

98). What is the available flip flop in T to D flip flop conversion?

D flip flop

T flip flop

S-R flip flop

None of the above

99). What is the required flip flop in T to D flip flop conversion?

D flip flop

T flip flop

S-R flip flop

None of the above

100). What is the required flip flop in JK to D flip flop conversion?

D flip flop

T flip flop

S-R flip flop

None of the above

Frequently Asked Questions on counters

1) A ring counter is a type of counter comprises of ___components?

Flip-flops

Transistors

Memory chips

Diodes

A ring counter is a type of counter comprises of flip-flops.

2) The output of flip-flops in a ring counter is connected to ____?

Flip-flops

Registers

Memory chips

Both b and c

The output of flip-flops in a ring counter is connected to memory chips also called registers.

3) A counter is a ___type of circuit?

Sequential

Combinational

Non-combinational

Both a and b

A counter is a sequential type of circuit.

4) Which of the following logic gates are used in Ring counter?

AND

OR

NOR

Both a and b

Ring counters are used to detect the various numbers values or various patterns within a set of information, by connecting AND & OR logic gates to the ring counter circuits.

5) Which of the following are the functions of counter?

Pulse count

Frequency count

Time count

All the above

The functions of counter includes frequency count, time count, and pulse count.

6) Which of the following flip-flops are used to implement a Ring counter?

D flip flop

JK flip flop

T flip flop

Both a and b

Ring counters are implemented using D and JK flip-flops.

7) Counters are classified as?

Synchronous

Asynchronous

Stable

Both a and b

Counters are classified as synchronous and asynchronous counter.

8) A synchronous type of counter is also called ___?

Shift register counter

Ring type counter

Twisted type counter

All the above

A synchronous type of counter is also called twisted type counter, ring type counter and shift register

counter.

9) A shift register is a ___circuit?

Sequential

Combinational

Logical

All the above

A shift register is a sequential type circuit.

10) Which of the following are the examples of sequential circuits?

Clocks

Counter

Flip-flop

All the above

The examples of sequential circuits includes flip-flop, counter and clocks.

11) SISO circuit is designed using ___flipflop?

T

D

JK

SR

SISO circuit is designed using D flipflop.

12) Asynchronous counter is also named____?

Ripple counter

Parallel counter

Serial counter

Both a and c

Asynchronous counter is also named as ripple or a serial counter.

13) In which one of the following counters, the flip flops are not clocked simultaneously?

Synchronous counter

Asynchronous/ripple counter

Both a and b

None of the above

The flip-flops are not clocked simultaneously in asynchronous/ripple counter

14) In which one of the following counters, the circuit will be simple even if the number of states increases?

Synchronous counter

Asynchronous/ripple counter

Both a and b

None of the above

In asynchronous/ripple counter the circuit will be simple even if the number of states increases

15) Which one of the following is a basic building block of counters?

R-S flip flops

J-K flip flops

T flip flops

None of the above

The basic building block of counters is T flip flops

16) In which one of the following one the output will always follow a sequence either in downward or upward direction?

Counters

Registers

Both a and b

None of the above

In counters, the output will always follow a sequence either in a downward or upward direction

17) Which one of the following counters is designed using D flip flop?

Ring counter

Ripple counter

Both a and b

None of the above

The ring counter is designed using D flip flop whereas the ripple counters are designed using T flip

flops

18) In which one of the following counters the counter output is in sequence?

Ring counter

Ripple counter

Both a and b

None of the above

-In ripple counters the counter output is in sequence whereas in ring counters the counter output is not

in sequence

19) Which one of the following is also called a parallel counter?

Synchronous

Asynchronous

Both a and b

None of the above

The synchronous counter is also called a parallel counter and these counters are difficult to construct

20) Which one of the following is an example of sequential logic circuit?

Encoder

Demux

Counter

All of the above

The registers, counters, flip flops, etc are examples of the sequential logic circuit

21) In which one of the following counters, the maximum frequency of operation is low?

Synchronous

Asynchronous

Both a and b

None of the above

In asynchronous counter, the maximum frequency of operation is low compared to parallel counter

22) In which one of the following counters, the clock is same for all flip flops?

Synchronous

Asynchronous

Both a and b

None of the above

In ripple/asynchronous counter the clock is the same for all flip flops

23) Which one of the following is an example of combinational circuit?

Encoder

Flip flop

Counter

All of the above

The encoder, mux, decoder, demux, etc are examples of a combinational circuit

24) In which one of the following counters, the clock is different for all flip flops?

Synchronous

Asynchronous

Both a and b

None of the above

In synchronous counter or parallel counter the clock is different for all flip flops

25) In which one of the following counters the maximum frequency of operation is high?

Synchronous

Asynchronous

Both a and b

None of the above

In synchronous counter, the maximum frequency of operation is high due to a shorter propagation

delay

26) In which one of the following counters the hardware requirement is more?

Synchronous

Asynchronous

Both a and b

None of the above

In synchronous counters, the hardware requirement is more compared to ripple counters

27) Which one of the following is also called a ripple counter?

Synchronous

Asynchronous

Both a and b

None of the above

The asynchronous counter is also called a ripple counter or serial counter and these counters are easy to construct

28) Counters defines the combination of _____data.

Digital

Automated

Cybernated

Programmed

29) Asynchronous counters are_____to design.

Difficult

Moderate

Simple

Tough

30) Number of logic gates required to design asynchronous counters are?

More

Less

Moderate

None of the above

31) Flip flops depends on number of _____?

Values

Digits

States

Signals

32) How many flip flops produce the output 4 at the counter.

1

2

3

4

33) Asynchronous counters are designed with_____type of flip flops.

T

SR

JK

None of the above

34) D-flip flops are used to design _____counters.

Asynchronous Decade

Synchronous Decade

Asynchronous

Synchronous

35) Asynchronous counter can have _____counting states.

2^n-1

2n

2n-1

2n+1

36) When Modulo-16 asynchronous counter is modified by decade then it is referred as__ counter.

Decade

Ripple

Asynchronous

Synchronous

37) J-K flip flop multi-vibrators set up for the_____mode.

0

1

Toggle

Infinity

38) The operation of Up/down counter is very ____than up counter.

Fast

Immediate

Static

Slow

39) Down counter is quick than _____counter.

Ripple counter

BCD counter

Clock ripple

Up/Down counter

40) If present count=3, then the next count will be____using down counter.

2

5

4

6

41) 4-bit down counter counts from_____.

15 to 1

0 to 15

2 to 15

15 to 33

42). If present count=3, then the next count will be____using up counter.

2

5

4

6

43) In asynchronous 4-bit up counter with d- flip flop it counts from 0 to ___.

11

10

12

15

44) Asynchronous counter is also known as_____counter.

Parallel

Serial

Hybrid

None of the above

45) Which of the following are the components of a 3-bit synchronous counter?

J-K flip-flops

AND gates

OR gates

Both a and b

46) Which of the following is the output of T-flip flop when Q='0' and T='0'.

0

1

X

None of the above

47) Which of the following is the output of T-flip flop when Q='0' and T='1'.

0

1

X

None of the above

48) Which of the following are the first flip-flop circuits?

Multivibrators

Trigger circuits

Schematic trigger

All the above

49) Which of the following are used for designing a flip-flop?

Logic gates

Latches

Counters

None of the above

50) Which of the following logic gates are used for designing flip-flops?

NAND

NOR

AND

Both a and b

51) Which of the following are the applications of flip-flops?

Memory

Frequency division

Registers

All the above

52) A register is a collection of ____?

Flip-flops

Passive elements

Active elements

None of the above

53) Which of the following are the universal logic gates?

AND

OR

NAND

NOT

Frequently Asked Questions on Shift Registers

1) Which of the following mode is used as control inputs to a 4-bit universal shift register?

Loopback mode

Parallel load mode

Serial input mode

All of the above

2) The number of flip-flops in a shift register is dependent upon?

The modulus of the counter

The number of stages in the counter

The number of digits to be stored

None of the above

3) In which mode can we provide data to all the flip-flops simultaneously?

Loopback mode

Serial input mode

Parallel input mode

All of the above

4) A shift register is a digital circuit that _____.

Stores data.

Shifts the data from left to right.

Shifts the data from right to left.

all of the above.

5) What is a shift register?

An adder circuit

A memory circuit

A combinational circuit

A decoder circuit

6) What type of register is a shift register?

Digital

Analog

Both 1 and 2

Neither 1 nor 2

7) A shift register is made up of how many flip-flops?

One

Two

Three or more

None of the above

8) What happens when a shift register is clocked?

Stays the same (no change)

Changes to the next bit in sequence (shifts)

Changes to an opposite state (complements)

None of the above

9) A shift register can have _____data input and _____data output lines.

Only one, only one

Two, two

One, two

Three, two

10) A shift register can be used as a _____-bit register by connecting all the parallel outputs together and applying the same input to all the parallel inputs.

4-bit

8-bit

16-bit

n-bit

11) Which among the following is the main advantage of using a shift register?

Ease of use and cost effective solution for applications that require several I/O pins at a time.

It is used where single input and single output is used.

Ease of use and cost effective solution for applications that require less number of I/O pins at a time.

None of these.

12) Which of the following type of shift register is used in 8085 microprocessor?

Serial

Parallel

Both a and b

None of the mentioned

13). Which of the following is true about shift registers?

It is not used to store multi-bit data.

They are available only in the parallel mode of operation.

They are useful for data transfer from one location to another.

All of the above.

14) Which of the following is not a characteristic of universal shift registers?

Serial in/serial out (SISO) operation is possible.

SISO operation is not possible.

Serial in/parallel out (SIPO) operation is possible.

Parallel in/serial out (PISO) operation is possible.

15) Which of the following shift registers can be used as both PISO and SIPO?

4-bit parallel-in serial-out shift register.

4-bit universal shift register.

4-bit serial-in/serial-out shift register.

4-bit parallel load serial in, serial out shift.

16) What is the difference between a SISO, SIPO and PISO shift register?

A SISO has one data input, while a SIPO has 2 .

A SIPO has one data input, while a PISO has 2.

A PISO has one data input, while a SISO has 2.

A PISO has two data inputs, while a SIPO has 1.

None of the above answers are correct.

17) What is one of the main functions of a shift register?

To convert digital information into analog signals.

To control voltage levels according to clock pulses.

To store bits and bytes of binary data temporarily.

To convert serial digital information into parallel or parallel to serial.

18) Which of the following shift registers are also called universal shift registers?

n-bit right shifter with parallel load.

n-bit right shifter with parallel load & clear and.

n-bit right shifter and left shift register with parallel load.

All of above.

19) A _____is a group of special circuit with their outputs connected in series to form a

register.

Data register

Shift register

Control register

Accumulator

20) What are the two basic types of shift registers?

Latched & unlatched registers.

4-bit & 8-bit registers.

SISO & PIPO

SINO & PINO

21) A shift register is essentially a group of flip-flops, so what can they be used for?

They can be used to store data.

They can be used to count sequences.

They can be used to shift the numbers.

They can be used to multiply numbers together.

All the above.

22) Which of the following statements about shift registers is true?

Parallel-in and serial-out shift registers are used when we want to store large amounts of data in a

small space.

Serial-in and serial-out shift registers are used when we want to store large amounts of data in a

small space.

Parallel-in and parallel-out shift registers are used when we want to transmit data over long

distances.

Parallel-in and serial-out shift registers are used when we want to transmit data over long distances.

23) Why would you use a shift register?

To connect multiple devices together so the output can be fed back into the input.

To connect multiple devices together but not have the output fed back into the input.

To connect multiple devices together and feed back the output into the first device.

To connect multiple devices together and feed back the output into any device except for the first device.

24) What types of functions can a shift register perform?

As data storage spaces

Data movement devices

Temporary storage units

All of the above

25) What is the difference between a serial and parallel shift register?

A serial shift register shifts in data serially, while a parallel shift register shifts in data in parallel.

A serial shift register shifts out data serially, while a parallel shift register shifts out data in parallel.

A serial shift register shifts out data serially, while a parallel shift register shifts out data serially as well.

A serial shift register shifts out data in parallel, while a parallel shift register shifts out data in parallel as well.

26) Which of the following is correct about serial in/serial out shift register?

1 input, 1 output

1 input, 2 outputs

2 inputs, 1 output

2 inputs, 2 outputs

27) Which type of shift register is used to implement a digital up-down counter?

Serial in/serial out (SISO) type

Serial in/parallel out (SIPO) type

Parallel in/serial out (PISO) type

Parallel in/parallel out (PIPO) type

28) Shift register is a___?

Digital Circuit

Analog Circuit

Logic circuit

Series circuit

29). How many stages are in a 74LS170 parallel-out, serial-in shift register?

8

16

4

2

30) Which of the following is a serial-in, parallel-out shift register?

74LS164

74LS165

74LS168

74LS169

31) Which of the following is a disadvantage of shift registers?

The memory size of a shift register is limited to the number of flip-flops used in the register.

The time required to access data from a shift register is more than that of a random access memory unit.

The reliability of the circuit decreases as its complexity increases.

None of above.

32) Which of the following is a advantage of shift registers?

The memory size of a shift register is limited to the number of flip-flops used in the register.

The time required to access data from a shift register is less than that of a random access memory unit.

The reliability of the circuit decreases as its complexity increases.

None of above

33) The maximum clock frequency of the 74HC595 shift register is?

50MHz

100MHz

120MHz

40MHz

34) A shift register with a feedback function is useful in _____applications?

Multiplication

Division

Ones Compliment

Twos Complement

A&B

35) Which of the following statements are TRUE regarding shift registers?

A shift register is a group of flip flops.

It is not used for data storage.

It is not used for the data movement.

Shift register includes set of latches.

36) What is serial in parallel out (SIPO) shift register?

Data is serial loaded into parallel output attached flip-flops.

Data is loaded into a single flip-flop and output appears parallel.

Data is loaded into serial output attached flip-flops and appear in serial order.

The data transmission can be done paralelly.

37) Which of these is not true about shift registers?

They share a single CLK signal, which causes the data stored in the system to shift from one location to the next.

By connecting the last flip-flop back to the first, the data can cycle within shifters for extended periods.

They use a cascade of flip-flops.

The output of one flip-flop is connected to the input of another.

38) Which of the following terms describes a shift register's ability to cycle its data within

itself, thus acting as memory?

Cascading

Connecting

Cycling

Cascoding

39) Which of the following is a reason SIPO registers might be attached to the output of

microprocessors?

When more I/O pins are required than are available.

When we need an easier way to convert binary inputs into parallel outputs.

When we need more binary inputs than are available, and we don't want to use serial data.

When we need more binary inputs or outputs than are available, but we don't have enough space on our board for extra pins.

40) What is a SIPO register?

A type of microprocessor.

A serial input-parallel output shift register.

A type of storage device that holds data in registers.

None of the above

41) Shift registers can also be used as:

Extenders

Pulse extenders

Both a and b

Neither a nor b

42) Does a parallel-in serial-out (PISO) shift register configuration have the data input on lines

D1 through D4 in parallel format, D1 being the ....bit?

LSB

MSB

Data bit

Binary digit

43) To write the data to the register, what must the Write/Shift control line be held?

HIGH

LOW

EITHER

NEITHER

44) What are the advantages of using a SIPO shift register?

Serial input, parallel output

Parallel input, serial output

Serial input, serial output

Parallel input, parallel output

45) Which of the following are true about a SIPO Shift Register?

It uses edge triggered flip flops.

The data is loaded into an internal buffer register first, then copied to an output register when a load

signal is received.

All flip flops operate at the same frequency.

All of the above.

46). In a Serial Input Serial Output, how is data is shifted?

In SISO, a single bit is shifted at a time in either right or left direction under clock control.

In SISO, all bits are shifted at the same time in either right or left direction under clock control.

In SISO, the entire data is shifted at once in the same direction under clock control.

None of the above.

47) What is the first step in designing a serial-in/serial-out shift register?

Set all flip-flops to reset.

Apply the LSB of the binary number to D3 bit.

Pass D3 output to D2 input.

Apply binary number 1111.

48) What is the difference between a series input (SI) and a parallel input (PI)?

Series input (SI) loads the data one bit at a time while parallel input (PI) loads the data simultaneously.

Series input (SI) removes the data one bit at a time while parallel input (PI) removes the data all at the same time.

Series input (SI) shifts the contents of the register one bit position to either the left or the right while parallel input (PI) shifts the contents of the register two bit positions to either the left or the right.

Series input (SI) and parallel input (PI) are the same.

49) How the data is stored in a SISO shift register?

In a parallel form.

In a serial form.

In a combination of serial and parallel forms.

None of the above

50) Which of the following digital circuit can store a bit of data and shift it left or right?

Encoder

ADC

Multiplexer

Shift register

51) Which of the following is used to create a circular buffer?

Encoder

ADC

Multiplexer

Shift register

52) Which of the following digital circuit is used to make a shift clock?.

Encoder

ADC

Shift register

Decoder

53) The most common type of shift register is?.

SIPO

SISO

PISO

PIPO

54) A shift counter can be created by using_____?

Microcontroller

ADC

Shift register

DAC

55) A shift register chain can be created by using_____.

Memory data register

Microprocessor

Shift register

Flip Flop

56) Which of the following is used to create a shift register ladder?

Shift register

Memory data register

Memory address register

Processor registers

57) A shift register is a_____.

Digital circuit that delays a digital input signal.

Sequential logic circuit that delays a digital input signal.

Digital circuit that delays an analog input signal.

Sequential logic circuit that delays an analog input signal.

58). A shift register can be used to _____.

Create a delay in a digital signal.

Create a delay in an analog signal.

Create a digital-to-analog converter.

Create an analog-to-digital converter.

59) The most common type of shift register is the_____.

Serial shift register

Parallel shift register

Serial-in, parallel-out shift register

Parallel-in, serial-out shift register

60) In a shift register, the output of each stage is the ?

Input to the next stage.

Input to the previous stage.

Output of the previous stage.

Output of the next stage.

61) A shift register can be used to?

Create a delay in a digital signal.

Create a delay in an analog signal.

Create a digital-to-analog converter.

Create an analog-to-digital converter.

62) What is the effect of a left shift operation on a binary number?

It multiplies the number by two.

It divides the number by two.

It has no effect on the number.

None of the above.

63) What is the purpose of a bidirectional shift register?

To multiply binary numbers by two.

To divide binary numbers by two.

To shift data left or right as selected by a control line.

None of the above.

64) What is the effect of a right shift operation?

It multiplies the number by two.

It divides the number by two.

It has no effect on the number.

None of the above

65) What is a Ring counter?

A shift register with the serial outputs connected back to the serial inputs in order to produce particular sequences.

A type of counter that exhibits a specified sequence of states.

A shift register that is used to generate random numbers.

A type of counter that is commonly used in digital circuits.

66) What is a Johnson counter?

A shift register with the serial outputs connected back to the serial inputs in order to produce particular sequences.

A type of counter that exhibits a specified sequence of states.

A shift register that is used to generate random numbers.

A type of counter that is commonly used in digital circuits.

67) What is a ring counter?

A shift register in which the output of the most significant stage is fed back to the input of the least significant stage.

A counter in which the output of the most significant stage is fed back to the input of the least significant stage.

A counter in which the output of the most significant stage is fed back to the input of the second most significant stage.

A counter in which the output of the most significant stage is fed back to the input of the third most significant stage.

68).What is the main advantage of a ring counter over a binary counter?

The ring counter is self-decoding.

The ring counter is more efficient in terms of state usage.

The ring counter is easier to use.

The ring counter has more states.

69). Johnson counter is an example of which type of sequential circuit:

Asynchronous sequential circuit

Synchronous sequential circuit

Counter

None of these

70). Which of the following counters is known as 2-bit Johnson Counter?

MOD-8 counter

MOD-4 counter

MOD-2 counter

MOD-6 counter

شكراً لحسن

إصغائكم

THANK YOU ☺

UOMU022021 Digital Systems
Department of Computer Engineering

END PREPARATORY WEEK 14
BEFORE THE FINAL EXAM