Subject Name: Digital Principal System Design

Q1. The binary number 10101 is equivalent to decimal number $\qquad$

1. 19
2. 12
3. 27
4. 21

Answer: 4

Q2. The universal gate is $\qquad$

1. NAND gate
2. OR gate
3. $A N D$ gate
4. None of the above

Answer: 1

Q3. The inverter is $\qquad$

1. NOT gate
2. OR gate
3. AND gate
4. None of the above

Answer: 1

Q4. The inputs of a NAND gate are connected together. The resulting circuit is

1. OR gate
2. AND gate
3. NOT gate
4. None of the above

Answer: 3

Q5. The NOR gate is OR gate followed by $\qquad$

1. AND gate
2. NAND gate
3. NOT gate
4. None of the above

Answer: 3

Q6. The NAND gate is AND gate followed by $\qquad$

1. NOT gate
2. OR gate
3. AND gate
4. None of the above

Answer: 1

Q7. Digital circuit can be made by the repeated use of $\qquad$

1. OR gates
2. NOT gates
3. NAND gates
4. None of the above

Answer: 3

Q8. The only function of NOT gate is to

1. Stop signal
2. Invert input signal
3. Act as a universal gate
4. None of the above

## Answer: 2

Q9. When an input signal 1 is applied to a NOT gate, the output is $\qquad$

1. 0
2. 1
3. Either 0 \& 1
4. None of the above
5. High
6. alternately high and low
7. may be high or low depending on relative magnitude of inputs

## Answer: 2

Explanation: In OR any input high means high output.
Q14. Decimal number 10 is equal to binary number

1. 1110
2. 1010
3. 1001
4. 1000

Answer: 2

Explanation: $1010=8+2=10$ in decimal.
Q15. Both OR and AND gates can have only two inputs.

1. True
2. False

## Answer: 2

Explanation:Any number of inputs are possible.
Q16. A device which converts BCD to seven segments is called

1. Encoder
2. Decoder
3. Multiplexer
4. None of these

Answer: 2
Explanation:Decoder converts binary/BCD to alphanumeric.

Answer: 1

Q10. In Boolean algebra, the bar sign (-) indicates $\qquad$

1. $O R$ operation
2. AND operation
3. NOT operation
4. None of the above

## Answer: 3

Q11. The resolution of an nbit DAC with a maximum input of 5 V is 5 mV . The value of nis

1. 8
2. 9
3. 10
4. 11

Answer: 3
Explanation:
$(5 / 2 N-1) 1000=5$ or $N=10$
Q12. 2's complement of binary number 0101 is $\qquad$

1. 1011
2. 1111
3. 1101
4. 1110

Answer: 1

Explanation: 1's complement of 0101 is 1010 and 2's complement is $1010+1=1011$.
Q13. An OR gate has 4 inputs. One input is high and the other three are low. The output is $\qquad$

1. Low

Q17. In 2's complement representation the number 11100101 represents the decimal number

1. +37
2. -31
3. +27
4. -27

Answer: 4

## Explanation:

$A=11100101$. Therefore $\bar{A}=00011010$ and $A^{\prime}=\bar{A}+1=00011011=16+8+2+1=27$.
Therefore $\mathrm{A}=-27$.

Q18. A decade counter skips $\qquad$

1. binary states 1000 to 1111
2. binary states 0000 to 0011
3. binary states 1010 to 1111
4. binary states 1111 to higher

## Answer: 3

Explanation:A decade counter counts from 0 to 9. It has 4 flip-flops. The states skipped are 10 to 15 or 1010 to 1111.

Q19. BCD input 1000 is fed to a 7 segment display through a $B C D$ to 7 segment decoder/driver. The segments which will lit up are $\qquad$

1. $a, b, d$
2. $a, b, c$
3. all
4. $a, b, g, c, d$

## Answer: 3

Explanation:1000 equals decimal 8 Therefore all segments will lit up.

Q20. A ring counter with 5 flip flops will have

1. 5
2. 10
3. 32
4. Infinite

Answer: 1


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