

Cs302p  
Quiz # 3  
Spring 2022

1. Three decode counter would have \_\_\_\_\_.
  - 4 BCD counters
  - 5 BCD counters
  - 2 BCD counters
  - **3 BCD counters**
  
2. A decimal counter has \_\_\_\_\_ states.
  - **10**
  - 9
  - 2
  - 7
  
3. It should be kept in mind that don't care terms should be used along with the terms that are present in \_\_\_\_\_.
  - **Minterms**
  - K – map
  - Latches
  - Expressions
  
4. In order to build on XOR gate using NAND gates only, \_\_\_\_\_ gates(s) are required.
  - 1
  - 2
  - 3
  - **4**
  
5. In 8×1 multiplexer, which one of the following lines must always be connected to ground in order to activate the multiplexer?
  - Y
  - W

- G'
- VCC

6. Which of the following symbols is used to represent XOR operation?

- ^
- +
- ×
- $\oplus$

7. Total number of inputs in half adder is \_\_\_\_\_.

- 1
- 2
- 3
- 4

8. There are \_\_\_\_\_ cells in a 5- variable k-map.

- 16
- 24
- 32
- 64

9. There are \_\_\_\_\_ cells in a 4 – variable k – map.

- 24
- 20
- 8
- 16

10. how many selected lines would be required for an 8x1 multiplexer?

- 3
- 2
- 8
- 1

11. When implementing a half adder by using gates, which of the following gates is used to give Sum (s) as an output?

- AND
- **XOR**
- OR
- NOR

12. When implementing a half adder by using gates, which of the following gates is used to return carry bit as an output?

- **XOR**
- NAND
- AND
- OR

13. Convert the binary number 1100 to gray code?

- **1010**
- 0101
- 1000
- 0111

14. Convert the gray code 1011 to binary.

- 0111
- **1101**
- 1011
- 1010

15. Reflected binary code is also known as \_\_\_\_\_ code.

- **Gray code**
- Excess - 3
- BCD
- ASCII

16. Why do we use gray code?

- To count the number or bit changes
- **Error correction**
- Error Detection
- Invert the code

17. Which of the following gates is used for parity generation for a binary data string?

- OR
- AND
- NOR
- **XOR**

18. A Half adder can be built by using the combination of \_\_\_\_\_ and \_\_\_\_\_ gates?

- AND, NOT
- AND, OR
- **AND, XOR**
- OR, XOR

19. To build a full adder using gates how many gates are required?

- 1 AND gates, 2 OR gates, 1 XOR gates
- 2 AND gates, 3 OR gates, 1 XOR gate
- **2 AND gates, 2 XOR gates, 1 OR gate**
- 2 AND gates, 2 OR gates, 2 OR gates

20. A Karnaugh map (k - map) is an abstract form of \_\_\_\_\_ diagram organized as a matrix of squares.

- Cycle Diagram
- **Venn Diagram**
- Block Diagram
- Triangular Diagram

21. Ripple counter are also called \_\_\_\_\_.

- VLSI counters
- Synchronous counters
- SSI counters
- **Asynchronous counters**

22. When implementing a half adder by using gates, which of the following gates is used to return carry bit as an output?

- **XOR**
- NAND
- AND
- OR

23. A circuit that compares two numbers and determines their magnitude is called \_\_\_\_\_.

- Inverters
- Size comparator
- **Magnitude comparator**
- Height comparator

24. Which of the following is the modified code of Excess – 3 code?

- **BCD**
- Gray Code
- ASCII
- EBDIC

25. How many flop flops are required to create a counter circuit which can count from 0 to 7?

- **1**
- 2
- 3
- 4

26. What is the maximum possible range of bit-count specifically in n –bit binary counter consisting of ‘n’ number of flip-flop?

- 0 to  $2^n$
- 0 to  $2^{n+1}$
- **0 to  $2^n - 1$**
- 0 to  $2^{n+1}$

27. The parallel outputs of a counter circuit represent the \_\_\_\_\_.

- Parallel data word
- Counter modulus
- Counter frequency
- **Clock count**

28. An identify comparator is defined as a digital comparator which has \_\_\_\_\_.

- Two outputs terminates
- Three output terminates
- No output terminates
- **Only one output terminates**

29. A counter circuit is usually constructed of \_\_\_\_\_.

- A number of latches connected in cascade form
- A number of NAND gates connected in cascade form
- A number of NOR gates connected in cascade
- **A number of flip-flops connected in cascade**

30. TTL 74s85 is a \_\_\_\_\_.

- 8 – bit word comparator
- 8 – bit magnitude comparator
- **4 – bit magnitude comparator (correct)**

- **1 – bit digital comparator**

31. Each product term of group, w'xy' and wy, represents the \_\_\_\_\_ in that group.

- POS
- **Sum of Minterms**
- Input
- Sum of Maxterms

32. Which of the following expressions represents S outputs in a full adder?

- $(A \times C_{in}) \oplus B$
- **$A \oplus B \oplus C_{in}$**
- $(A + B) \times C_{in}$
- $(A + B) \oplus C_{in}$

33. Which of the following is an invalid BCD code?

- 1001
- 0011
- **1101**
- 0101

34. The k – map based Boolean reduction is based on the following unifying theorem:  $A + A' = 1$ .

- Impact
- **Non-impact**
- Complementarity
- Force

35. In a comparator , if we get input as  $A > B$  then the output will be \_\_\_\_\_.

- B
- A

- 1
- 0

36. Comparators are used in \_\_\_\_\_.

- Motherboard
- Memory
- Hard drive
- CPU