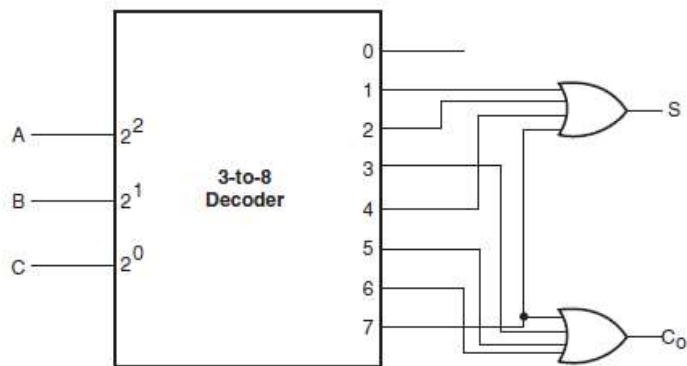| Table		Example		
A	B	C	S	C_o
0	0	0	0	0
0	0	1	1	0
0	1	0	1	0
0	1	1	0	1
1	0	0	1	0
1	0	1	0	1
1	1	0	0	1
1	1	1	1	1

Figure   Example

1. **Define combinational logic.**
   When logic gates are connected together to produce a specified output for certain specified combinations of input variables, with no storage involved, the resulting circuit is called combinational logic.

2. **Explain the design procedure for combinational circuits.**
   The problem definition
   Determine the number of available input variables & required O/P variables.
   Truth Table Construction
   Obtain simplified Boolean expression for each O/P (using K-Map).
   Obtain the logic diagram.

3. **Define Half adder and full adder**
   Half Adder: The logic circuit that performs the addition of two bits is a half adder.
   Full Adder: The circuit that performs the addition of three bits is a full adder.

4. **Define Decoder?**
   A decoder is a multiple - input multiple output logic circuit that converts coded inputs into coded outputs where the input and output codes are different.

5. **What is binary decoder?**

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A decoder is a combinational circuit that converts binary information from n input lines to a maximum of 2 n outputs lines.

6. **Define Encoder?**

   An encoder has 2 n input lines and n output lines. In encoder the output lines generate the binary code corresponding to the input value.

7. **What is priority Encoder?**

   A priority encoder is an encoder circuit that includes the priority function. In priority encoder, if 2 or more inputs are equal to 1 at the same time, the input having the highest priority will take precedence.

8. **Define multiplexer?**

   Multiplexer is a digital switch. If allows digital information from several sources to be routed onto a single output line.

9. **What is Demultiplexer?**

   A Demultiplexer is a circuit that receives information on a single line and transmits this information on one of 2^n possible output lines

10. **What is code conversion?**

    If two systems working with different binary codes are to be synchronized in operation, then we need digital circuit which converts one system of codes to the other. The process of conversion is referred to as code conversion.

11. **What is code converter?**

    It is a circuit that makes the two systems compatible even though each uses a different binary code. It is a device that converts binary signals from a source code to its output code. One example is a BCD to Ex-3 converter.

12. **What do you mean by analyzing a combinational circuit?**

    The reverse process for implementing a Boolean expression is called as analyzing a combinational circuit. (ie) the available logic diagram is analyzed step by step and finding the Boolean function.

13. **Give the applications of Demultiplexer.**

    It finds its application in Data transmission system with error detection.
    One simple application is binary to Decimal decoder.

14. **Mention the uses of Demultiplexer.**

    Demultiplexer is used in computers when a same message has to be sent to different receivers. Not only in computers, but any time information from one source can be fed to several places.

15. **Give other name for Multiplexer and Demultiplexer.**

    Multiplexer is otherwise called as Data selector.
    Demultiplexer is otherwise called as Data distributor.

16. **What is the function of the enable input in a Multiplexer?**

    The function of the enable input in a MUX is to control the operation of the unit.

17. **List out the applications of decoder?**

    a. Decoders are used in counter system.
    b. They are used in analog to digital converter.
    c. Decoder outputs can be used to drive a display system.

18. **Application of Mux.**

a. They are used as a data selector to select one output of many data inputs.
b. They can be used to implement combinational logic circuits
c. They are used in time multiplexing systems.
d. They are used in frequency multiplexing systems.
e. They are used in A/D & D/A Converter.
f. They are used in data acquisition system.

19. List out the applications of comparators?

a. Comparators are used as a part of the address decoding circuitry in computers to   select a specific input/output device for the storage of data.
b. They are used to actuate circuitry to drive the physical variable towards the reference value.
c. They are used in control applications.