CO326 - Assignment 03

WRITE A SHORT FUNCTIONAL DESCRIPTION OF FOLLOWING ICS

74LS374 : 3 STATE OCTAL D TYPE TRANSPARENT

These device consists Latch enable (LE) feature and output enable (OE)feature that help to accept inputs in LE is high and OE is higher will output the output signal. These devices are designed for driving highly capacitive or relatively low impedance loads. Do not require additional interfaces or pull up components. They have the capability of connecting directly to and driving bus lines. Therefore no interfacing is required to function well.

74LS244 : 3 STATE OCTAL BUFFER/ LINE DRIVER

This IC capable of connecting multiple devices together without interfacing. The implementation done to improve the performance in and PC board density of the circuit. Capable of connecting more similar types of ICs due to higher fanout. Improved noise rejection will be key functionality of the device helps identified the 3 states more efficient and having a higher accuracy.
This buffer is capable of isolating the input and the output. Like they are not interfered by each other. And also the line driver will improve the transmission of data.

74LS138 : 1 OF 8 DECODER / DEMULTIPLEXER

The implementation of the IC ensures the speed of the device in a higher manner by allowing bipolar memory addressing for selecting addresses. Schottky barrier ensures the speeding of the device as well as improving the compatibility of the device for TTL logic ICs

74LS245 : OCTAL BIDIRECTIONAL TRANSCIEVER WITH 3 STATE INPUT OUTPUT

ICs are designed for asynchronous two way communication between data busses. This implementation of the IC capable of isolating busses by checking pin outputs. (Reserved pins such DIR for input and OE(bar) for output.

REFERENCE

1. https://eecs.wsu.edu/~ee314/lectures/lecture21.pdf
2. https://www.electronics-tutorials.ws/combination/bus-transceiver.html
3. https://www.elprocus.com/3-to-8-line-decoder-74ls138-ic-pin-configuration-features-circuit-and-applications/