Problems

Solutions to be submitted:

1.1 In a 16×16 switching unit, the connection function is

$$f(x_3x_2x_1x_0) = x_3\overline{x_2}x_1\overline{x_0}$$

Draw the diagram expression of the switching unit.

1.2 Draw a three stage 12×12 CLOS network where the input number of each switching unit in the first stage is 4, the numbers of switching units in the second stage are 4, the output number of each switching unit in the third stage is 4.

1.3 Draw an 8×8 Banyan network (any type). Show a package which enters the network from the first input port (0 0 0), with the destination address (1 1 0), how to self-route through the network.

Solutions NOT to be submitted:

1.4 Two phones, phone A and phone B, communicate with each other through a TST network. The voice from phone A, "a", is contained in the time slot 376 (TS376) and line 0. The voice from phone B, "b", is contained in the time slot 8 (TS8) and line 31. All the time-division switching units employ the "Controlled write, Sequential read" method and the space-division switching unit employs the "Output Control" method. One of the intermediary time slots (ITS) for switching is ITS15. Fill all the red "X" in the following figure with proper numbers.