(b) What are the advantages of tabulation method ? A staircase light is controlled by two switches, one at the top of the stairs and another at the bottom of the staircase.

(i) Make a truth table for this system.

(ii) Write logic equation

(iii) Realize the circuit using AND – OR gates.

8

UNIT-IV

4 (a) How you use a decoder as a ROM ? Design a 5 to 32 decoder using one 2 to 4 and Four 3 to 8 decoder ICs.

8

(b) Explain the Code Converter. Design a Code Converter that converts a BCD code from the 5421 code.

8

OR

4 (a) Explain the operation of binary serial and parallel adder with schematic diagram.

8

(b) Explain diode switching matrix in briefly. Design a binary multiplier that multiplies two 4-bit numbers. Use AND gates and binary adders.

8

UNIT-V

5 (a) Explain the procedure to convert one Flip Flop to another Flip Flop. Explain how the J. K. Flip Flop can be converted into a T Flip Flop.

8

(b) Explain the operation of a Master Slave Flip Flop and show how the race around condition is eliminated.

8

OR

5 (a) Explain the working of Serial in Parallel Out Shift register with logic diagram and waveform.

8

(b) What is Modulus Counter ? Draw the state diagram of a modulo-4 UP/DOWN counter. Design its circuit using J. K. Flip Flops.

8