

Module-3

- 5 a. What is multiplexer? Design a 32:1 multiplexer using 16:1 MUX and one 2:1 multiplexer. (05 Marks)
- b. Show how using a 3 to 8 Decoder and multi input OR Gates following Boolean Expressions can be realized simultaneously. (06 Marks)
- $$F(A, B, C) = \sum m (0, 4, 6)$$
- $$F(A, B, C) = \sum m (1, 2, 3, 7)$$
- $$F(A, B, C) = \sum m (0, 5)$$
- c. Show how two 1 to 16 DEMUX can be connected to get 1 to 32 DEMUX. (05 Marks)

OR

- 6 a. Explain parity Generators and checkers using suitable examples. (05 Marks)
- b. What is Magnitude Comparator? Explain 1 bit magnitude comparator. (05 Marks)
- c. What is PLA? Design seven segment Display using PLA. (06 Marks)

Module-4

- 7 a. Explain 4 bit serial in parallel out register. (04 Marks)
- b. Explain a 3 bit binary Ripple up counter. Give the block diagram, truth table and output waveforms. (06 Marks)
- c. Explain the working of JK master slave Flip Flop along with implementation using NAND Gates (06 Marks)

OR

- 8 a. Design synchronous MOD – 6 counter with truth table and state diagram. (06 Marks)
- b. What is universal shift Register? Explain any one application of universal shift register with block diagram and truth table. (06 Marks)
- c. Write the comparison between Synchronous and Asynchronous counter. (04 Marks)

Module-5

- 9 a. Explain 5 bit Resistive divider with diagram. (06 Marks)
- b. Explain with neat diagram the working principle of Digital clock. (05 Marks)
- c. Explain the terms Accuracy and Resolution for D/A converter. (05 Marks)

OR

- 10 a. Explain with Block diagram the operation of successive approximation converter. (08 Marks)
- b. Explain counter type A/D converter with diagram. (08 Marks)

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