

7. The voltage needed for a TTL IC power supply is
 (a) 5V dc (b) 10 V dc (c) 2 V dc (d) 20 V dc
8. Which of the following memories is non-volatile memory?
 (a) ROM (b) PROM
 (c) Ferrite core memory (d) None of these
9. A circuit which does not operate in synchronism with clock signal is
 (a) Synchronous sequential circuits (b) Asynchronous sequential circuits
 (c) FPGA (d) combinational circuits
10. In this mode the inputs and outputs are represented by levels
 (a) Fundamental mode (b) Pulse mode
 (c) Both (a) and (b) (d) None of these

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Simplify the following expression $F(w, x, y, z) = \sum_m (1, 3, 4, 5, 9, 10, 11) + \sum_d (6, 8)$ using Quine – McCluskey method. (8)
12. Implement the full subtractor using a 1: 8 demultiplexer. (8)
13. Discuss in detail about JK flip flop with its truth table, state diagram and characteristics equation. (8)
14. Implement the following two Boolean functions
 $F1(A,B,C) = \sum(0,1,2,4)$
 $F2(A,B,C) = \sum(0,5,6,7)$ using
 i) PLA ii) PAL iii) ROM (8)
15. Design an asynchronous sequential circuit with two inputs X and Y and with one output Z. Whenever Y is 1, input X is transferred to Z. When Y is 0, the output does not change for any change in X. Use SR latch for implementation of the circuit. (8)