

2207/A13

OCTOBER 2011

DIGITAL PRINCIPLES AND APPLICATIONS

Time : Three hours

Maximum : 100 marks

PART A — (6 × 5 = 30 marks)

Answer any SIX questions.

1. Explain the ASCII code.
2. Explain the Gray code.
3. What is binary logic?
4. Prove that $x \cdot x = x$.
5. Write a note on sum of product.
6. Explain the Demultiplexer.
7. Describe with a logic diagram and truth table of a Half adder.

8. Draw the circuit JK flipflop and explain its working.

9. Explain the working of binary parallel adder with neat circuit.

10. Explain the Astable multivibrator.

PART B — (4 × 10 = 40 marks)

Answer any FOUR questions.

11. Briefly Discuss the demorgans theorem.

12. Explain the clocked RS flipflop.

13. Explain the ripple counter.

14. Binary addition

(a) 320+120

(b) 200+174.

15. Describe with a logic diagram parallel in parallel out shift register.

16. Explain the Johnson counter.

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PART C — (2 × 15 = 30 marks)

Answer any TWO questions.

17. Draw the circuit JK Master Slave flipflop and Explain its working.

18. Explain the asynchronous counter.

19. Simplify the equation using K-Map
 $F(A,B,C,D) = (0,1,2,3,4,5,6,7)$.

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