

1257/A13

MAY 2008

DIGITAL PRINCIPLES AND APPLICATIONS

Time : Three hours Maximum : 100 marks

PART A — (6 × 5 = 30 marks)

Answer any SIX questions.

1. Explain streamlined Method of converting binary-to decimal.
2. Explain the basic parts of a computer with a diagram
3. Write the logic symbol of AND gate with truth table.
4. What are basic Gates? Why they called so?
5. Explain Decoder with diagram.
6. Explain Exclusive OR using AND gate.
7. Explain Half subtractor with circuit and truth table.

8. Explain 2's complement subtraction with example.
9. Explain clocked RS flip Flop.
10. Explain Schmitt Trigger.

PART B — (4 × 10 = 40 marks)

Answer any FOUR questions.

11. Convert 21.13 into its binary equivalent.
12. State and prove Commutative Laws of Boolean Algebra.
13. Explain the simplification of Boolean Expression using K-Map.
14. Explain Seven Segment Indicator.
15. Explain binary subtraction with suitable example.
16. Construct a 4 bit asynchronous counter and explain its working principle.

PART C — (2 × 15 = 30 marks)

Answer any TWO questions.

17. (a) Represent the binary (1100.11) into hexadecimal.
(b) Represent the decimal number 534.35 in to hexadecimal.

18. (a) State and prove De Morgan's Law
(b) Explain commercially available ROMs.
19. (a) Explain JK flip Flop.
(b) Build up a mod 12 counter and explain it working.