

MAY 2013

**P/ID 17454/RCD/
PCAG**

Time : Three hours

Maximum : 75 marks

PART A — (5 × 5 = 25 marks)

Answer ALL questions.

All questions carry equal marks.

1. (a) Discuss on the use of complements to represent negative numbers in detail.

Or

- (b) Convert the following:

(i) $(250.5)_{10} = (?)_8$

(ii) $(1998)_{10} = (?)_2$

(iii) $(1001001.011)_2 = (?)_{10}$

2. (a) Draw the circuit of full subtractor and explain.

Or

- (b) Briefly describe the functions of decoder.

3. (a) Explain clocked RS flip – flop with its block diagram.

Or

- (b) Write short notes on flip – flop excitation tables.

4. (a) Write short notes on scratchpad memory.

Or

- (b) Explain bidirectional shift register with parallel load.

5. (a) Explain the design of the Hard – wired control.

Or

- (b) Write short notes on PLA control.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

All questions carry equal marks.

6. Discuss in detail, the various binary codes with examples.

7. Simplify the following equation using K – Map:
 $F(w, x, y, z) = \Sigma(0, 1, 2, 4, 5, 6, 8, 9, 12, 13, 14)$.

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8. Explain about the multilevel NAND circuits in detail.
 9. Describe a four bit Ripple counter and its working with neat circuit and timing diagram.
 10. Explain about Shift registers in detail.
 11. Discuss on Status register in detail.
 12. Draw the detailed block diagram for computer and discuss.
 13. Explain about the execution of an instruction.
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