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Register Number:
Name of the Candidate:

B.Sc. DEGREE EXAMINATION, May 2015

(INFORMATION TECHNOLOGY)

(FIRST YEAR)

(PART-III)

150: FUNDAMENTALS OF DIGITAL COMPUTERS

Time: Three hours Maximum: 100 marks

SECTION-A **(8×5=40)**

Answer any EIGHT questions

1. Explain the logic gates with their graphic symbol, algebraic function and truth table.
2. Using DeMorgan's theorem, show that
   a) (A+B)'(A'+B')=0
   b) A+ A'B+A'B'=1
3. What is a full adder? Draw the logic diagram of a full –adder and explain.
4. What is micro program? Describe the micro programs applications in detail.
5. What is a micro processor? Explain the functions of a microprocessor with the help of a block diagram.
6. Explain various data transfer instructions of 8085 microprocessor.
7. Explain storage hierarchy in detail.
8. What is RAM? Describe the structure of a typical RAM IC and explain.
9. What is I/O interface and why it is required?
10. Explain the working of a flat panel display in detail.

SECTION-B **(3×20=60)**

Answer any THREE questions

11. a) Find the minimal sum of products for the Boolean expression.

    $F=\sum(1,2,3,7,8,9,10,11,14,15)$ using tabulation method.

    b) Draw a logic circuit for the following functions using NOR gates.

    (A+B)(B+C)(A+C)

12. a) Design a 4-bit binary parallel adder using full adders.

    b) Explain the shift micro operations each with example.

13. a) Explain the addressing modes of 8085 microprocessor.

    b) Describe the salient features of Pentium processor.

14. What is a Cache memory? Describe various organisation of cache memory in detail with its relative advantages and disadvantages.

15. Briefly explain different types input devices with their relative advantages and limitations.

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